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UNIVERSITY OF ALBERTA

NURSE-PATIENT INTERACTION: OBSERVATIONS OF TOUCH

BY

© JOAN LORRAINE BOTTORFF

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of DOCTOR OF PHILOSOPHY.

FACULTY OF NURSING

EDMONTON, ALBERTA

SPRING 1992

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Faculty of Nursing
3rd Floor Clinical Sciences Building
University of Alberta
Edmonton, Alberta
Canada
T6G 2G3

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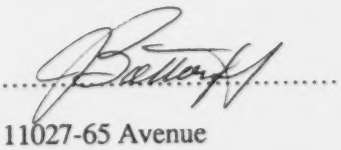

11027-65 Avenue

Edmonton, Alberta

T6H 1W3

Date: March 27 1992

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FACULTY OF GRADUATE STUDIES AND RESEARCH

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Janice M. Morse
Dr. Janice M. Morse

Marilyn J. Wood
Dr. Marilyn J. Wood

Al R Dobbs
Dr. Al Dobbs

Marion Allen
Dr. Marion Allen

Joyce E. Roberts
Dr. Joyce E. Roberts

Date: March 27 1992

ABSTRACT

In this study, the interactions between nurses and patients in an acute oncology unit were examined in order to develop a method and instrument for the description of nurse-patient touch. Videotaped interactions with eight cancer patients and the nurses that cared for them and open-ended interviews with 14 participants were the major source of data. Using ethological methods, an observational schedule was developed from detailed descriptions of selected touching interactions. A purposeful sample of 56 interactions and a random sample of 60 interactions that included touch events were coded using a continuous sampling method. Acceptable levels of inter- and intraobserver agreement were established and maintained throughout the coding process with the exception of nurse activity and intensity of touch.

Five kinds of touch were identified in this study: comforting touch, connecting touch, working touch, orienting touch, and social touch. These touches are comparable to the two major kinds of nurse-patient touch previously identified in the literature. However, detailed qualitative and quantitative descriptions of these types of touch and the variations in associated verbal and nonverbal behaviours that accompany each type of touch provide more comprehensive descriptions than has previously been available. In particular, the use of connecting touch, orienting touch, and social touch have not been well recognized or described.

In this study, the four types of attending identified—*doing more*, *doing with*, *doing for*, and *doing tasks*—represent the types of attending used by nurses caring for cancer patients during interactions that involve touch. Patterns of touch were found to vary depending on type(s) of attending used during interactions with patients, which supports the premise that the interactional context in which touch is embedded is a critical factor in understanding the use of touch.

Touch and touching are complex phenomenon which form an important aspect of nursing practice. The development of prescriptive and predictive nursing theory

regarding the use of touch depends on the development of a thorough understanding of touch interventions. However, the lack of attention to the complexities inherent in describing touching and being touched and the interactional context in which touch occurs has retarded progress. The contribution of this study to existing touch research is the development of a method and a valid and reliable observational schedule that can be used to study touch which fills this gap.

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I. INTRODUCTION

Actual touching of the patient's body is a universal aspect of nursing practice that is, for the most part, taken for granted. In clinical practice, nurses have used touch to comfort, reassure, encourage, and support patients as they try to cope with the uncertainties of illness, recovery, or impending death, to assess patients, and to protect patients and themselves. Touch is also a part of most routine nursing procedures and routines. Despite the predominant use of touch in nursing practice, very little is known about the specific ways in which nurses use touch and the effect of various patterns of touch on patients. Touch may convey physical and psychological intimacy or, on the negative side, physical or psychological assault, for example the invasion of privacy. A nurse's attempts to comfort with touch may not be welcomed by every patient, resulting in discomfort and anxiety, the opposite effect to what is intended. The development of predictive and prescriptive nursing theory regarding the use of touch depends on the development of an understanding of touch interventions, their ramifications for physical and psychological well-being, and factors influencing variability in patient responses to touch. Previous researchers have tended to ignore the complexities inherent in describing touching and being touched and the interactional context in which touch occurs (Bottorff, 1991a; Weiss, 1988). Knowledge of nurse-patient touch could be enhanced by describing patterns of touch in conjunction with other nonverbal and verbal behaviours on the part of both the nurse and patient. Therefore, the purpose of this study was to describe touching patterns that are used with patients experiencing discomfort by taking into account both nonverbal and verbal behaviours, in addition to touch, as they occur in the context of nurse-patient interactions.

Background Information

Touching and being touched are complex phenomena for which theoretical explanations grounded in communication have dominated. The importance of tactile communication to human development has been argued by investigators such as Frank (1957), Rubin (1963),

Montague (1986), and Older (1982). Their argument that tactile contact is essential for physical and emotional development is widely accepted. There is a wide variety of attitudes and practices associated with physical touch both within and across various cultures. In some cultures (e.g., French, Russian), touch is an essential part of everyday life, while in other cultures (e.g., those of Anglo-Saxon origin), individuals are more reserved and distant. Within societies, touching behaviours may vary between families and along ethnic and class lines (Autton, 1989). Despite the fact that restrictions are placed on touching, it is generally agreed that touch is not only important in early childhood, but that its importance continues throughout adulthood. Bowlby (1958) suggests that the need for patterns of touch more commonly associated with childhood can reoccur in adulthood in situations of danger, incapacity, and sickness. Dominian (1971), Barnett (1972a), Autton (1989), and Goodkoontz (1979) share the view that becoming a patient may lead to an increased need for touch.

Barnett (1972a) and Weiss (1979, 1986) have developed theoretical frameworks of touch for nursing based on accumulated empirical evidence in relation to communication and touch. While these frameworks have both influenced subsequent research related to nurse-patient touch, they have not been used outside the nursing context. To date, there is still insufficient evidence to support proposed theoretical linkages in these frameworks. In a review of the nursing literature related to touch, Estabrooks (1987a) suggests that a second emerging theory relating to touch is one of caring and comfort. Her suggestion is supported by the frequent descriptions of touch as an act of caring or comfort in the non-investigative descriptive literature in nursing (Amacher, 1973; Carpenter, 1981; Clement, 1986; Gadow, 1984; Goodykoontz, 1979; Hein, 1980; Leininger, 1981; Locsin, 1984; Mercer, 1966; Meredith, 1978; Pepler, 1985; Waddell, 1979; Weiss, 1986; Wharton & Pearson, 1988) and the attempt by some investigators to link touch and caring (Bailey, 1984; Clement, 1983; Glick, 1986; McCorkle; 1974; Mitchell, Habermann-Little, Johnson, VanInwegen-Scott, & Tyler, 1985; Schoenhofer, 1989; Weaver, 1990) and touch and comfort (Lesser &

Keane, 1956; Morse, 1983; Pepler, 1984; Probrisolo, 1984; Solberg & Morse; in press; Triplett & Arneson, 1979; Weiss, 1990). In addition, Montague (1986), in summarizing studies related to the use of touch under conditions of stress, concludes that touch may create a soothing effect, reduce anxiety, and provide a feeling of increased security if the intent of the touch is one of reassurance or comfort. Finally, two researchers have recently contributed to the development of a theory of touch by proposing a model of *how* nurses touch (i.e., describing the process of touching) and how nurses acquire a touching style based on data obtained from interviews with nurses (Estabrooks & Morse, in press). The findings that the process of cueing is an integral part of touching is supported by studies using verbal and nonverbal behaviours as "cues" to evaluate the effectiveness of touch (Knable, 1981; Langland & Panicucci, 1980; McCorkle, 1974) and studies that have examined nurses' use of touch in response to patient cues (Schoenhofer, 1989; Solberg & Morse, 1991).

Descriptions of Touch

Touch used by nurses has been described in two ways: according to the motivation or incentive for touching and in relation to its actual physical characteristics. Classifications of touch based on intent have varied among investigations of touch, and in some cases, definitions of these classifications have not been provided. Nevertheless, it is possible to identify several broad categories of nurse-patient touch from the literature. Procedural touch (Clement, 1983; Mitchell et al., 1985), sometimes referred to as instrumental touch (Gadow, 1984; Watson, 1975) and task-oriented touch (Burnside, 1977), is generally associated with physical and technical procedures which, according to Weiss (1986), have a curative or rehabilitative purpose. For Weiss (1986), this type of touch is characterized by an intent that focuses on maintaining health, curing or preventing complications, and is usually directive and controlling. Examples of procedural touch include pulse-taking, abdominal palpation, dressing changes, and giving injections.

A second type of touch, which is generally characterized by an intention to care or comfort, has been described as comforting touch (Probrisolo, 1984; Weiss, 1986), non-procedural touch (Mitchell, et al., 1985), non-necessary touch (Barnett, 1972b), expressive touch (El-Kafass, 1982/1983), caring touch (Bailey, 1984; Glick, 1986), empathetic touch (Gadow, 1984), and affective touch (DeWever, 1977, Schoenhofer, 1989). While specific definitions have varied, the main motive behind the use of this form of touch is to ease psychological and physical distress and/or communicate caring. Weiss (1986) has characterized comforting touch as a gentle, nonintrusive but conscious affective response to the patient. These contemporary conceptualizations of touch contrast with early nursing writers who implied that the use of touch in such activities such as bathing, massage, positioning, and "laying on of hands" was an integral part of comfort (Estabrooks, 1987b). Although some researchers (Barnett,1972b; El-Kafass, 1982/1983) have described caring/comforting touch as "outside the realm of procedural duties," others (Burnside, 1981; Estabrooks, 1989; Schoenhofer, 1989; Watson, 1975; Weiss, 1986) have suggested that this simple distinction may not be helpful. For example, procedural and comforting touches may be operating simultaneously. In a situation where the overt intent of a touch may be procedural (e.g., back rub or bed bath), the nurse may perceive her main intent during the procedure to be comforting. On the other hand, the same procedure could be performed with the major intent of completing a task that is expected or required as a part of the prescribed nursing care. How and to what extent a nurse's overt and covert intentions related to touch influence patient's perceptions of touch and their response to touch is still not clear (Weiss, 1986).

There is little empirical evidence to verify these two broad categories of touch. The only investigator who attempted to delineate the types of touch based on nurses' descriptions provides detailed descriptions of touch that support the affective and task oriented touch dichotomy and adds a "protective" touch category to the typology (Estabrooks, 1989). With the potential to dehumanize, protective touch is described as a complex form of touch

characterized by an intent to protect the patient physically (i.e., restraining or otherwise preventing physical injury) or to protect the nurse physically (e.g., by using gloves or holding a patient's arm to protect him/herself from personal injury) or emotionally (e.g., by withdrawing touch or using "cold touch"). Estabrooks suggests that caring (affective) touch and protective touch are mutually exclusive and that only task-related touch can be combined with either of the former types. Recognition of this third type of touch indicates that a wider range of non-therapeutic outcomes may be associated with touch in nursing practice than previously thought. It is also important to note that unlike previous researchers Estabrooks' (1989) findings support the importance of task touch and the extent to which patient outcomes (positive or negative) may be influenced by the way nurses use touch during procedures and raises questions about the previous assumption that task touch holds less value than other forms. The kinds of touch used by nurses need to be confirmed as well as the ability of observers to accurately identify different touches.

The last major type of touch described in the literature, which is described by Krieger (1975), is therapeutic touch. It is characterized by the intent to help or heal, is defined by a set of procedures, and does not involve actual physical contact between the nurse and the patient. For the purposes of this study, only ordinary forms of touch used between nurses and patients are of interest.

The second way touch has been described is in terms of the qualities of the physical act of touch. Weiss (1979, 1986) has provided a framework in which four qualities are given primary importance: location (i.e., that part of the patient's body that is touched), intensity (extent of indentation or pressure of the touch), action (the specific gesture or movement used in touching), and duration (the temporal length of the touch). Weiss (1986) suggests that these qualities may be useful in differentiating between different types of touch and that these qualities along with the intent of the caregiver touch can be used to describe the nature of touch. These qualities have been used as a basis for the observation and description of touch (Clement, 1983; El-Kafass, 1982/1983; Harrison & Woods, 1991; Le May &

Redfern, 1987; Oliver & Redfern, 1991; Pepler, 1984; Schoenhofer, 1989); however, the usefulness of this framework in facilitating an understanding of touch has not been clearly demonstrated. For example, Pepler (1984) found that variations in touch pattern were much more a function of activity, with only intensity differentiating procedural and caring touches.

The Study of Nurse-Patient Touch

A methodological review of the investigative literature on nurse-patient touch was completed by this author (Bottorff, 1991a). Despite the number of studies on touch between nurses and patients, theoretical and methodological limitations have led to a lack of definitive findings in relation to touch. The limitations of this research will be summarized in the following section. (For further detail see Appendix A.)

One of the most salient problems underlying research on touch is that the phenomenon of touch is poorly understood. This problem can be linked to at least three major limitations of nurse-patient touch research. First, in the absence of adequate definitions of touch, researchers have tended to conceptualize touch narrowly and simplistically. For example, many researchers using observational methods have simply recorded the frequency of particular touch behaviours (operationalized as skin-to-skin contact) occurring within some sampling frame or interval, with little regard for the context in which touch has occurred or the complexity of behaviours that are associated with and characterize touch as it occurs in real life situations. The major problem with research that focuses on a single channel of communication is that it supplies only partial information about the interaction (Patterson, 1983). The advantage of studying touch from a multi-channel perspective can be illustrated with the example of a handshake. If the focus was on verbal interaction, a study of greetings used when a handshake occurred would be considered appropriate. Alternatively, if the focus was on nonverbal behaviours associated with the skin-to-skin contact, each component of the handshake gesture might be described (e.g., movements of the hand involved in reaching out, juxtaposition of the hands, and so forth). Neither approach is likely to capture the range of variations in interactions involving a handshake. A more

comprehensive description than either of these approaches offer would be required because the variations in this interaction are determined by a complex interplay between both verbal and nonverbal behaviours, including those nonverbal behaviours that occur in addition to the hand movements involved in the handshake gesture. This kind of description could be obtained by studying handshakes in the context of the total interaction between individuals. In order to increase understanding of touch as a coordinated multi-channel behaviour as it occurs in real life situations, touch must be studied in the context of nurse-patient interaction rather than simply focusing on skin-to-skin contact. Detailed descriptions of nurse-patient touch which include associated nonverbal and verbal behaviour patterns would provide an important foundation for the development of adequate and comprehensive theoretical and operational definitions of touch.

The second major limitation found in the research on nurse-patient touch has been the predominant use of deductive approaches to study touch. This research has contributed little to our understanding of touch because it has been based on previous research that has been done in different contexts or unsubstantiated assumptions about touch. It has been assumed that investigators understand the tactile codes, meanings, and behaviours well enough to be able to identify the relevant factors and ask the right questions (Jones & Yarbrough, 1985). However, the fact that there is an agreement among researchers that the concept of touch is still poorly understood makes this assumption very tenuous. The problem in deciding *a priori* what behaviours may be important to study in relation to touch is that researchers risk missing important behaviours or focusing on insignificant behaviours and, as a consequence, end up with incomplete or invalid descriptions of touch (Morse & Bottorff, 1990). More inductive research is needed to provide the detailed descriptions of the broad range of dimensions of nurse-patient touch that can serve as a conceptual basis for productive deductive research. A few rich descriptions of nurse-patient touch that have been derived from interview data with nurses using inductive methods were found in the investigative literature (Estabrooks, 1989; Estabrooks & Morse, in press). These studies

attest to the value of inductive methods, but the findings need further verification with observational data and with other groups of nurses in other settings. The use of inductive methods as the foundation for observational studies of touch has been rare, although the potential of such studies in enhancing our understanding of touch has been demonstrated by Solberg and Morse (in press). Investigations of nurse-patient touch using inductive methods could be strengthened by combining various data collection strategies (e.g., open-ended interviews and observations).

Third, there are methodological limitations in the research on nurse-patient touch that can be linked to inadequate conceptualizations of touch. Although the development of data collection instruments has become more sophisticated, many of these instruments lack a sound conceptual basis. In addition, the use of broad interpretive coding categories (e.g., positive, negative, neutral), lack of attention to the complete range of behaviours, as well as, the timing and sequence of behaviours in observational studies have limited descriptions of touch. With few exceptions, reporting of reliability has been inconsistent and inadequate, and the validity of instruments has received little attention. It is clear that more refined approaches to the study of nurse-patient touch are needed along with the development of sound instruments. Both are fundamental to the advancement of knowledge related to nurse-patient touch and are dependent on a commitment to systematic efforts to evaluate measures and further conceptual work in this field.

One observational approach that has potential for increasing our understanding of touch is that of ethology. This method, used in studying aspects of human and animal behaviour, facilitates the systematic observation and analysis of behaviour under natural conditions (Eibl-Eibesfeldt, 1989; Lehner, 1979). Although ethology has been used in studies of maternal-infant interactions (Klaus & Kennell, 1976), child behaviour (Blurton Jones, 1972), and facial expression (Ekman, Sorenson, & Friesen, 1968), this method has not been used to study nurse-patient behaviours or interactions. Replacing less refined deductive approaches to the study of nurse-patient touch with an ethological approach

addresses several problem areas identified in the existing research because it includes an inductive phase which would allow the identification of significant behaviours that should be observed in touch episodes, facilitates observation of a wider range of simultaneous verbal and nonverbal behaviours, and permits more sophisticated levels of observation and analysis than has been demonstrated in that past. Therefore, the following study was conducted using ethological methods to describe nurse-patient touch.

Purpose of the Study

The purpose of this descriptive study was to explore and describe touching patterns that are used with patients, taking into account both nonverbal and verbal behaviours in addition to touch as they occur in the context of nurse-patient interactions. The specific objectives of this study are as follows:

1. analyze touch episodes in order to develop a valid and reliable instrument to study nurse-patient interactions involving touch, and
2. develop a method for describing the complex nature of touch,
3. describe the nature of nurse-patient interactions involving touch.

Assumptions

1. The purpose of touch may vary for similar appearing physical contacts.
2. Several purposes may be inherent in a single nurse-patient touch.
3. The purpose(s) of touch can be more accurately identified if a comprehensive analysis of the context in which the touch occurs is completed. The context would included nonverbal and verbal behaviours of both patient and nurse (including total body stance, movement, and position of nurse and patient as well as hand movements), preceding and proceeding events, and simultaneous environmental stimuli.

II. METHODS

The purpose of this study was to explore and describe the behaviours of nurses and patients during touch episodes in order to develop a method for describing the complex nature of touch in the context of nurse-patient interactions (NPIs) and a reliable and valid instrument to study nurse-patient touch. The research method of ethology was incorporated into the exploratory-descriptive design of the study because it facilitates systematic observation, analysis, and description of behaviour under natural conditions (Eibl-Eibesfeldt, 1989; Lehner, 1979; Tinbergen, 1963). In this chapter, the research method, study sample, data collection, methods of establishing observer agreement and reliability, data analysis, and ethical considerations are described.

Ethology

Ethological methods allow the study of complex behaviour patterns at fine levels of detail, characteristically beginning with an inductive descriptive phase (Blurton Jones, 1972) and subsequently moving to a more structured deductive phase as more is learned about the behaviours of interest. Since there are no comprehensive ethograms of nurse-patient interaction or nurse-patient touch that would justify the use of other quantitative methods, and since the observational instruments that are available to study nurse-patient touch are not comprehensive and are of questionable validity, systematic and detailed observational strategies are required. The use of ethological methods to study nurse-patient touch facilitates identification of significant behaviours that should be observed in touch episodes, and it provides the opportunity to observe a wide range of nonverbal behaviours simultaneously (including touch behaviours), capture aspects of timing, sequencing, or other features of the organization of behaviour that may be important in understanding nurse-patient touch, and enables the identification of subtle or rapid changes in behaviour associated with touch and touching. By replacing less refined approaches to the study of nurse-patient touch with more sophisticated observation and levels of analysis, it may be possible, for example, to describe a wider range of touch types than has been identified in the past. This ethological approach

and the data derived from it can provide a sound foundation for future studies on nurse-patient touch.

Sample

To maximize the opportunity to observe sufficient numbers of various types of interaction involving touch, cancer patients who were experiencing discomfort (e.g., pain, nausea) were selected for the following reasons: First, patients who are experiencing discomfort require a high proportion of nurse-patient contact, and second, the behavioural indications of the discomfort these patients experience should provide the stimulus for nurses to provide comforting kinds of touch, some of which may be associated with procedures or tasks. Patients were excluded from the study if they did not speak loudly or clearly enough to be easily heard, were not English speaking, or if their treatment (e.g., radium inserts) or condition (e.g., leukopenia requiring reverse isolation) placed restrictions on the duration and/or nature of the nursing care provided. Using a convenience nonprobability sampling technique, 136 cancer patients who were admitted to an acute care setting were selected for inclusion in the study. Permission for access from attending physicians was not granted for 22 patients. In the majority of cases, the physician expected that the patient would be discharged soon or indicated that the patient was unable to given informed consent. Of the remaining 104 patients, ten consented to participate in the study. Two of these patients were not videotaped. One patient was not admitted for his final course of chemotherapy as expected, and the other patient's condition changed before videotaping could be started. The remaining five consenting male and three consenting female patients and the nurses who were caring for them provided the sample of videotaped NPIs for this study. A biographical sketch of the sample is presented in Table 1. Four of the patients who participated in the study died eight to twelve weeks following data collection.

Table 1

Characteristics of the Study Patients

	Characteristics				
Pt	Sex	Age	Diagnosis	Reason for Admission	Symptoms
1	M	53	Metastatic prostate cancer	Pain control	Pain in lower back and hips
2	M	39	Carcinoma of left lung	Chemotherapy	Shortness of breath, pain
3	F	66	Breast cancer with bone metastasis	Palliative RT to right femur and pelvis	Pain
4	M	38	Recurrent seminoma	Reassessment and chemotherapy	Pain, nausea
5	M	45	Squamous cell carcinoma of tongue	Intractable nausea and vomiting and mucositis related to RT treatment	Pain, difficulty swallowing, sore mouth
6	F	61	Metastatic breast cancer	Investigation of weakness in legs	Nausea, weakness, pain
7	M	42	Recurrent metastatic testicle carcinoma	Chemotherapy	Pain
8	F	44	Metastatic breast cancer	Symptom investigation and management	Headache, nausea, and vomiting

Approaching patients at the right time in their hospitalization proved to be difficult. If patients were too uncomfortable or heavily sedated, they were not able to give informed consent. To wait until their symptoms were under better control meant in many cases that the patients were nearly ready for discharge and would unlikely be in hospital for the three days, required for participation in the project. It also was found that the condition of patients could change very rapidly from one day to the next, sometimes without warning. There were also delays in obtaining permission to access patients (see Ethical considerations, p. 26). A review of the data related to the 104 patients who were approached by the researcher and who did not sign informed consents is informative. Of these patients, 15 were found to be unable to give informed consent, and 6 were inappropriate (e.g., were not experiencing any symptoms or spoke too quietly). The reasons provided by the remaining 83 patients for not participating in the project are shown in Table 2.

Table 2

Reasons Given for Not Participating in the Project

Reason	Number
Will be discharged/transferred soon	18
Feeling too sick/uncomfortable	13
Unwilling to move to a private room	7
Involved in other research projects already	5
Not interested	7
Unwilling to add anything to current situation	8
Family members reluctant to participate	3
Getting too much company	1
Concerns about videotaping/length of commitment	4
Reason Unknown	17

Most of the nurses who worked on the unit participated in the study. In all, 32 registered nurses and two student nurses who provided care for the patients in the study agreed to

participate. The number of times a staff member was videotaped was influenced by whether they were working full time or part time, whether they were scheduled to work during the times videotaping took place, and by their patient assignments. Eight registered nurses from this group participated in individual interviews following the completion of videotaping.

Data Collection

The Setting

One private room was set aside on one unit of an active treatment oncology ward for data collection. In this room, two cameras were mounted on the wall and were controlled remotely and monitored by the researcher from an adjacent area, thereby minimizing the intrusiveness of the camera, interference in patient care, and the influence of the presence of the observer (see Figure 1). A power-boosted microphone was attached to the wall to record verbal exchanges on the videotapes. The cameras ran continuously at slow speed (6 hours/videotape) for a period of three consecutive days (i.e., 72 hours) for each patient, with the exception of short periods of time when the recorders were turned off at the request of the patient (usually to provide privacy during particular care-taking activities) or a staff member if they did not wish to be involved in the study. The time in hours, minutes, and seconds was simultaneously recorded on videotapes with the use of remote controllers. Lights in the patient's room were turned up slightly after the patient went to sleep to allow for night recording. Although patients were assured that if the lighting interfered with their sleep the lights could be turned down, this was a problem for only one patient. For this patient, it was agreed that the lights would remain low until the nurse entered to provide care during the night. After the nurse left, the lights would be turned down again.

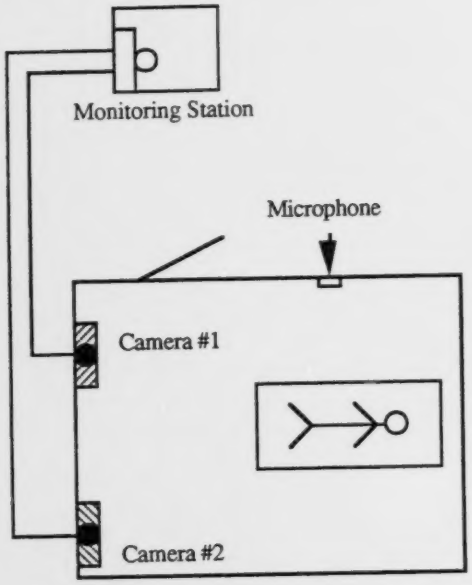


Figure 1. The placement of video equipment in research setting

Cameras were installed in the patient room selected for this study six weeks before data collection commenced. During this time, the researcher spent time on the ward answering any questions, demonstrating to interested staff how the equipment worked, and working with staff to select patients who would be appropriate for this study. Patients who were admitted to this room during this period were given a brief explanation about the cameras and assured that they were not operating. During this time, nursing staff working in this room became accustomed to seeing the cameras on the wall, and several of them mistakenly assumed the cameras were operating when in fact they were not. A pilot study was conducted to evaluate data collection techniques. Although the threat of reactivity is present in all observational studies, the two patients in the pilot study appeared unaffected and, in fact, very comfortable with the videotaping. The patients reported that they often "forgot about the cameras." The behaviour of most nursing staff also appeared unaffected by the presence of cameras. The strategies used to reduce intrusiveness of the cameras appeared to be successful and were, therefore, continued for the remainder of the study.

The Procedure

Data were collected over eleven months, from October 1990 to August 1991. When a patient agreed to participate in this study, he/she was moved into the room designated for this research. A notice that videotaping was in progress was posted on the patient's door, and staff members assigned to the patient were also informed. The continuous video recordings were monitored from an adjacent area, where the investigator or research assistant changed videotapes as necessary, operated the switcher, pan/tilt, and zoom lens to ensure the interactants were in full view as much as possible during care-taking activities, and kept a log of all observed activities. The researchers also kept field notes of comments and/or questions of staff members, patients, or family members who came to the monitoring station. Any activities out of camera range (e.g., bathroom activities) or activities that occurred when tapes were changed were considered "missing data." To obtain maximal quality and capture fine detail, SVHS equipment was used for recording. During data collection, back-up VHS videotapes were also recorded to prevent accidental loss of data. Demographic and clinical data were collected to describe the sample participating in this study and to gather information on medications or other prescribed treatments (see Appendix A).

While the main thrust of this investigation was the observation and description of behaviours, tape recorded interviews with patients and selected nurses were used to provide supplementary data, an approach recommended by others (Lytton, 1973; Redfern & Le May, 1987; Richards & Bernal, 1972). The unstructured open-ended interviews were intended to assess participants' responses to videotaping, elicit their perceptions of nurse-patient touches and the effect they perceived the touches to have using segments of the videotape as a stimulus (similar to the approach used by Pepler [1991]), and provide an opportunity to debrief participants. One nurse that was involved in each patient's care was asked to participate in an interview. Several criterion guided the selection of nurses. Only those nurses who were videotaped with the patient frequently enough to select a number of short episodes which did not include any other participants (i.e., other staff members or visitors)

and included a variety of touch events were considered. This usually required that the nurse was assigned to the patient for more than one shift. Nurses who were selected for an interview on the basis of their interactions with one patient were not considered again for interview in relation to their interactions with any subsequent patient even though they may have been videotaped with several. Using this selection process, one male and seven female nurses with varying lengths of professional experience were asked to participate in an interview. None of the nurses declined this request.

Videotaped segments used in the interviews were the same for each dyad, were limited to interactions which involved only the participants being interviewed, and were selected to include a variety of touch events in a variety of situations. Three to six videotaped interactions that included touch events were shown to each dyad as it was thought that any more than this would have been excessive for the patients involved in this study. At the end of the interviews, participants were asked not to share the questions with other staff or patients as additional information about the study may have made future participants more self-conscious and unnatural during videotaping. Interviews with patients were held three to five days following completion of videotaping or at a later time if this was more suitable for the patient. Nurses were interviewed after all videotaping was completed. The first two patients included in this study were part of a pilot study and were not interviewed; however, all other patients consented to and participated in an interview. In all, six patients and eight nurses were interviewed.

Data Analysis

The Ethogram

All ethological investigations begin with the development of an ethogram, a detailed description of the behaviour patterns that form the repertoire of the participants under study (Eibl-Eibesfeldt, 1989; Martin & Bateson, 1986). This descriptive phase is inductive, with the aim of establishing "what there is to explain in real life occurrences" (Blurton Jones, 1972, p.11) as well as a theoretical structure that is later verified statistically.

In this study, observations were started in an unstructured fashion, an approach suggested by Lehner (1979) and Rosenblum (1978). Units of interaction in which touch events were embedded were identified. Using these units, specific recurring behaviour patterns were delineated by comparing and contrasting interactions. For example, it was noted that NPIs differed along lines of nurse-patient proximity, the degree to which the nurse focused on the patient and/or caretaking tasks, and the ways in which patients participated in the interaction. Units of interactions that shared particular features of behaviour were grouped, and properties of each were then identified. Extensive and intensive examinations of the videotaped interactions were important in this process (Kendon, 1979; Scaife, 1979). Videotapes provided the freedom to examine details of behaviour, including the context in which the identified patterns occurred, without sacrificing breadth of coverage (Scaife, 1979). In addition, as Drummond (1981, p. 24) states, "The common denominators of patterns can be picked out with considerably more assurance if they are viewed repeatedly."

The four patterns of behaviour, referred to as types of attending, identified in this study were considered to be the structural units of nurse-patient interaction, and the following descriptions of each were developed. The first, *doing more* (making contact), is a type of attending in which the nurse does something *more* than is usually required and which is characterized by an *engaged* relationship between the patient and nurse. The nurse may be physically closer or take more time that is usually required. One or the other is necessary to attain the level of engagement necessary for this type of attending. This type of attending can occur with or without a task (related to activities of daily living or treatment) and is characterized by a focus on the patient (as person) which is intense. This attention provides the patient with an opportunity to self-disclose if they wish (although these may not be important secrets). When the proximity between nurse and patient is close, there is an opportunity for more touch contacts that would otherwise occur. This kind of attending is frequently, but not always, associated with patient distress or discomfort. This type of attending is also characterized by concerned acknowledgement of patient concerns and

symptoms and an attempt to understand the patient's experience in order to provide more appropriate care. Attending interactions of this type may be brief. Essential characteristics of this type of attending are that the nurse: gets the job done, is friendly and does something extra, and is involved in an engaged relationship with the patient.

The second type of attending, *doing for* (obliging, accommodating requests/needs), is evident when the nurse is primarily occupied by responding to patient requests and perceived needs that are not treatment related. For example, the activities the nurse may be involved in include assisting with dressing and grooming or with movement. This type of attending is characterized by a personalized approach to giving assistance. Often, it involves the "extras" which can take up a nurse's time, such as organizing the patient's environment so things are within easy reach. However, usually no more time is spent than necessary to complete the task. The nurse acts in a pleasant, considerate, and personal manner to please the patient, and this assistance is usually appreciated. These activities may lead to interactions in which the nurse attempts to understand the patient's personal experience of this illness/treatment, but these interactions are not part of "doing for." The patient is given an opportunity to direct care, for example, the nurse may ask, "Is there anything else I can get you?" The essential characteristics of "doing for" are that the nurse: gets the job done, is friendly, and completes a task that does not include treatment related activities.

The third type of attending, *doing with* (attentive, cooperative nursing), is evident when the nurse focuses equally on the task/activity (treatment or activities of daily living [ADL]) and the patient. This type of attending is characterized by a willingness to work cooperatively with patients. For example, the nurse may actively engage the patient by seeking or attending to their opinions, thoughts, and perceptions or by asking for assistance in relation to an activity/task. This type of attending does not necessarily involve more time with the patient as the patient is engaged with the nurse during the activity. The nurse often uses eye gaze to focus on the patient and reinforce interest in the patient; however, this gaze may be broken to attend to activities or tasks. In this type of interaction, the patient is alert

and able to cooperate in some way. The nurse is friendly, and his/her tone of voice is conversational or concerned. The essential characteristics of this type of attending are that the nurse: gets the job done, is friendly, and facilitates the involvement and/or cooperation of the patient in activities/tasks.

The last type of attending, *doing tasks* (attentive to routine checks/care, distancing), is a type of attending in which the nurse focuses on equipment, treatment, and getting the job done rather than on the patient. This type of attending is characterized by an indifferent, apathetic, or routinized approach. The nurse appears to be preoccupied with task at hand or other commitments (e.g., charting, other patients, going off shift). There is little or no attempt to engage the patient: In fact, patient comments or concerns may be ignored in an attempt to concentrate on the task. The nurse speaks in a rote, uninterested, absent-minded way to the patient or talks to him-/herself or the machines. This type of attending is often characterized by no eye gaze or only brief glances toward the patient. The nurse may appear hurried as time spent with patient is determined by the length of time required to do the task. The essential characteristic of this type of attending is that the nurse gets the job done.

Coding Instrument

Using the descriptions of the four types of attending as well as those of touch events, important behaviours were identified that could be included in a coding scheme. Since some behaviours of interest were used in prior observational schedules, these were assessed; and when appropriate, some components were adapted for use in this study. A manageable and meaningful coding scheme was drafted and refined during the process of coding and recoding several videotaped interactions. This was a collaborative process involving several individuals, some of whom were experts in observational techniques and others who were very familiar with the data that had been collected. Mutually exclusive and exhaustive codes were developed for proximity, nurse-patient dialogue, nurse activity, eye gaze, patient condition, whether others were in the room, and the touch event. These were explicitly

defined to minimize error due to misinterpretation. The full definitions of behaviours in the coding scheme used to gather data are provided in Appendix C.

Each videotaped interaction was coded using SVHS video recorders, with frame advance and slow motion used when necessary. The procedure was to view the videotape at least twice. During the first pass, the observer identified the type(s) of attending and noted where the touch event(s) occurred on the transcript of the interaction. During the second pass, using continuous coding, types of attending were recorded with their respective start times. When a type of attending that included one or more touch events commenced, detailed continuous coding for the remaining dimensions of the coding scheme began. In essence, this required that coding be initiated the exact second that any behaviour of interest changed. Times recorded on the videotapes (in hours, minutes, and seconds) were used for this purpose. Observers repeatedly viewed segments (often in slow motion or using frame advance) in which behaviours of short duration occurred or several behaviours were changing at once in order to identify precise start times and/or to determine the exact nature of the change. Detailed continuous coding concluded when the nurse exited the room or when the type of attending changed and the next unit did not include a touch event. Interactions were coded once by one of three nurse-observers. The investigator was one of these observers.

Videotaped data collected in this study were used to train observers in the use of the observational schedule until acceptable interobserver agreement was reached. During the initial phase of training, observers were involved in viewing videotapes to check and correct typed transcripts of nurse-patient interactions, an activity that helped to familiarize observers with the data that had been collected and increase their attentiveness to and appreciation of the range of verbal and nonverbal behaviours in nurse-patient interactions. In the second phase of training, the investigator introduced the other observers to the observational schedule and coding procedures. During this phase, videotaped segments were coded both jointly and independently by the observers. Observers discussed their observations (along with

reviewing relevant frames) with the investigator so that disagreements could be identified and corrected. They also assisted in revising or expanding definitions when necessary. The use of videotaped data were extremely valuable in this process, a fact that has been noted by others (Goldsmith, 1981; Gross & Conrad, 1991).

In the first data set, observer #1 and #2 coded 20 interactions each, and observer #3 coded 16 interactions. In the second data set, observer #1 coded 45 interactions, observer #2 coded 10 interactions, and observer #3 coded five interactions. Inter- and intraobserver agreement was checked, and the observers discussed their observations frequently with each other in order to reduce coding errors. Coding of interactions took place over a two month period.

Sampling Method

It is important to note that patients per se do not constitute the unit of analysis for this study; instead the units of attending that were embedded in nurse-patient interactions were used for analysis. Only those interactions that included touch events were selected for observation. An *interaction* was defined as beginning when the primary nurse entered the room and ending when the nurse left the room. Focal observations were sampled in two ways. First, 15 NPIs that clearly represented each type of attending and included touch events were purposefully selected from the total sample of videotaped interactions (n=1085). Four of the 60 interactions were later eliminated. Two interactions were found not to include scorable touches; in the third interaction, the touch did not occur during the type of attending that it had been selected to represent; and the fourth interaction was incorrectly classified. The remaining 56 interactions were coded. A second sample of 60 NPIs was then selected randomly (using a table of random numbers) from the remaining videotaped interactions that included scorable touch events and coded. The method of recording used was continuous real time measurement: That is, observers kept a running tabulation of behaviours during the interaction, with offset and onset times to the nearest second recorded as behaviours changed. Time intervals were defined by the entry and exit

of the nurse (i.e., the duration of nurse-patient contact) for the coding of types of attending and by the duration of a type of attending for coding the remaining behaviours. Therefore, time intervals varied between interactions and between and among types of attending.

This method of sampling was advantageous because it allowed for the validation of the data, the preservation of sequential as well as concurrent behaviour patterns, and maximized the chances of observing each type of behaviour, including touch events (which are often infrequent and/or of short duration).

Observer Agreement and Reliability

In this study, a distinction was made between observer agreement and observer reliability as suggested by others (Bakeman & Gottman, 1986; Johnson & Bolstad, 1973). Both approaches to the evaluation of the accuracy of observations were used.

Interobserver agreement, a measure reflecting the extent to which different observers using the same method to record the same behaviour agree with one another, and intraobserver agreement, a measure reflecting consistency or stability of observations, were both considered to be important (Bakeman & Gottman, 1986). Following training with the coding schedule, three observers independently coded four randomly selected videotaped interactions using the coding procedures described earlier. In order to determine agreement for the continuous coding strategy used in this study, it was assumed that the observers made coding decisions every second, as recommended by Bakeman and Gottman (1987) and Sackett (1978). The advantage of this approach is that it recognizes the fact that when using continuous coding observers are required to remain alert at all times, making decisions every second if necessary, and it solves the problem of protocol alignment. In addition, agreement with respect to the codes used as well as the onset and offset times are taken into consideration. Since observers were required to record onset times to the nearest second, a 1-second interval for agreement checking seemed reasonable. Using this approach, the protocol for each observer was sprayed using a Fortran 77 program so that each second of the coded interaction was filled with the observations recorded. Agreement was then checked

on a second-by-second basis to determine if the codes matched horizontally in each time interval. Coefficients of agreement were calculated using Cohen's kappa statistic (Cohen, 1960), as recommended by Bakeman and Gottman (1986, 1987). Agreements and disagreements were tallied into a kappa table, and the kappa statistic was calculated using DEST14, a Fortran 4 (H) program (Harley, 1985) designed to measure the degree of nominal scale agreement between multiple raters based on the work of Cicchetti, Heavens, Didriksen, and Showalter (1984), Fleiss (1971), and Fleiss, Nee, and Landis (1979). The proportion of agreement statistics (sum of the proportions of agreement for each observation divided by the total possible pairs of observations across all raters) were also provided using this program. To use this program, missing observations (i.e., when one or two observers missed an event that was coded by another observer) were treated as an additional category for each variable. The same procedure was used to check interobserver agreement when observers were coding the latter half of the interactions included in this study in order to check for observer decay. Finally, intraobserver agreement was determined for each of the three observers by randomly selecting three interactions they had previously coded. Each of these interactions was re-coded, and kappa and percentage agreement statistics were calculated using the same procedure as used to determine interobserver agreement. This procedure was used for all categories, with one exception. Since the category of duration of touch was unsuitable for kappa calculation, generalizability coefficients were calculated.

In this study, observers were calibrated with each other (with the exception of the category duration of touch) to determine if the data collected varied as a function of the observer. However, it is important to note that these agreement statistics contain information on only one source of error—differences among observers and the stability of the observations as reflected in the intraobserver checks. They do not provide information on the accuracy or consistency of the data collected, usually referred to as reliability in the psychometric sense (Bakeman & Gottman, 1986; Hollenbeck, 1978; Johnson & Bolstad, 1973; Mitchell, 1979; Sackett, Gluck, & Ruppenthal, 1978). To estimate reliability,

observer generalizability coefficients have been recommended as they provide additional information on the sources of variability in the data. In the context of this study, they provide a measure of the relative variance of an interesting facet of the study (e.g., observations of eye gaze) compared to an uninteresting facet (variance due to observers). In other words, it was important to be able to discriminate between those segments of the interactions that are characterized by sustained eye gaze and those that are not and not to discriminate these on the basis of observers. Since in this study only one rater observed each interaction, knowing how well the ratings of a single observer could be generalized to the average of all ratings assigned by observers was important. Using data from the second interobserver check, generalizability coefficients were calculated for each of the categories describing the interactional context, touch incidence, verbal communication associated with touch, and touch type using BMDP Statistical Software (Dixon, 1985). The category of initiator of touch was not included as there were very few touches that were not nurse-initiated. Because the number of observations that included one or more of the remaining codes describing touch (i.e., part of body used to touch, location of touch and forms of touch) were often small, these were also omitted from this analysis.

Qualitative and Quantitative Analysis

Essentially, two tracks of analysis which compliment and provide checks for each other were used: a qualitative descriptive track and a quantitative track (Als, Tronick, & Brazelton, 1979). Although they did not occur in isolation from each other, each of these tracks will be described separately.

Qualitative Analysis. Videotaped nurse-patient interactions and interviews were transcribed and checked for accuracy. All videotaped interactions involving touch events were identified and reviewed. Content analysis was conducted using videotaped interactions involving touch, transcripts of NPIs, and interview data. In this way, characteristics of each type of touch and significant aspects of patient and nurse perceptions of touch were identified and compared with observations of the touch episodes in which they were involved, and the

incongruities between observational and self-report data were identified. In addition, a content analysis of the interactional context in which touch occurred was completed. For example, interactions involving different proximities between the patient and nurse were compared in relation to the kinds of touch events that occurred. In this way, relationships that may not be apparent in the tabular data and evidence of issues or behaviour patterns that have not yet been included in previous research were revealed. Descriptions were expanded by selecting frames from videotapes to illustrate subtleties of behaviours that were of interest and by incorporating transcriptions of verbal interactions in which touch events were embedded. Reactions to videotaping were compared and summarized.

Quantitative Analysis. Coded data were entered into the computer. Using a Fortran program, the duration of each observation was calculated and added to the data file, and each unit of attending was assigned a unique identifier. As units of attending were not of the same length, Fortran programs were developed to read and/or transform the data to complete the necessary statistical analysis. Descriptive statistics were used to describe frequencies, durations, and patterns of behaviours for touch events as a whole and within each type of attending. Descriptive statistics were also used to identify patterns of concurrent behaviour associated with touch.

Ethical Considerations

Ethical review for this project was received from the appropriate committees of the Faculty of Nursing at the University of Alberta, the Nursing Research Committee of the participating hospital, and the Alberta Cancer Board. Prior to data collection, inservice sessions were conducted with staff members to orient them to the aims, rationale, and procedures of this study. Written, informed consent was obtained from most staff members (see Appendices D and H) and from those nurses who consented to be interviewed (see Appendix E).

Potential patients were identified with the assistance of the nurse managers on two wards. Permission to approach a patient who was selected for this study was obtained from the

patient's physician. If the physician agreed, the coordinator of nursing research, who was not directly involved in the patient's care, briefly met with the patient to explain the study and left an information sheet about the study with the patient (see Appendix F). If the patient was interested in hearing more about the study, they were asked to sign the information sheet and leave it at the nursing station. The researcher would then arrange to meet with interested patients to discuss the project in more detail. Accessing patients using this process was problematic as it resulted in such long delays in approaching patients that many potential participants were lost because their discharge was imminent or their symptoms were under control. A modification to the protocol for accessing patients was submitted to the three respective ethics committees and was approved. Following this, patients were identified in consultation with the unit managers (or their designates), and permission to approach patients was obtained from physicians, either by approaching physicians regarding each individual patient or through blanket approvals. The researcher directly approached patients for whom physician approval for access was obtained to determine interest in the study. If patients were interested in hearing more about the study, a full explanation was provided. Typically, family members were also present during these meetings. Patients and their families were encouraged to think about and discuss issues surrounding participation in the study before making a decision to participate. After responding to all questions about the study, written, informed consent was then obtained (see Appendix G) from patients and their family members (see Appendix H). Videotaping was commenced as soon as possible after consents were signed.

During videotaping, a sign was placed on the patient's door alerting others to the fact that videotaping was in progress and asking visitors and other staff members who had not yet given consent to see the investigator before entering the room, at which time the study was explained and written, informed consents obtained. If any staff or visitor did not wish to participate in the study, they were requested to inform the researcher at the monitoring station that they intended to enter the patient's room so that video recorders could be turned off.

Videotaping was also stopped at the request of patients and/or their family. These requests were made directly to the researcher monitoring the videotaping or indirectly through the cameras. Patients and nurses who consented to participate in this study were told that they could decline the request to be interviewed. The right to refuse to answer any question and the right to withdraw at any time were respected.

The investigation was described in terms of its major focus—NPI—to all prospective participants. They were correctly informed that observations would focus on verbal and nonverbal behaviours of both nurses and patients during usual caretaking interactions without emphasizing the investigator's interest in touch. It is standard practice among investigators studying nurse-patient touch to conceal the major focus of their studies (e.g., Clement, 1983; El-Kafass, 1982/1983; Pepler, 1984). These researchers suggest that the touching behaviour of nurses changes if this is revealed, and at least one group of researchers have found this to be so (De Augustinis, Isani, & Kumler, 1963).

Anonymity was protected by using identifying codes on all tapes and transcripts during the course of the study. Videotaped segments selected for use in the interviews were the same for each dyad and only included that particular nurse-patient dyad. Names recorded on videotapes or audiotapes were blanked out of the transcripts. In the final report, quotes from participants are anonymous, and names are not associated with any pictures that are used. As all participants agreed to the use of their tapes and transcripts for educational and further research purposes, the data collected in this study will be retained by the researcher and stored in a secure place.

III. RESULTS: OBSERVER AGREEMENT AND RELIABILITY

Two indices of inter- and intraobserver agreement (i.e., proportion of agreement and kappa) and one coefficient of interobserver reliability (i.e., generalizability coefficient) were estimated to evaluate the accuracy of the observational data collected using the observational schedule developed in this study. The results of these assessments will be presented in this chapter.

Observer Agreement

Interobserver agreement was checked twice using four randomly selected interactions on both occasions, and intraobserver agreement was checked once using three randomly selected interactions for each observer. The results of these estimates of agreement are shown in Tables 3, 4, and 5. The first 500 seconds of the interactions coded for the purpose of estimating agreement was used to determine kappas and proportion of agreement for categories representing the interactional context in which touch took place and the incident of touch. Kappas for categories describing the touch events were calculated by using all observations (i.e., seconds of touch) that described touch in the interactions that were coded for the purpose of estimating agreement. Therefore, the number of observations used varied with the number and duration of touch events that occurred in these interactions. The number of observations used to determine estimates of agreement have been included in Table 4 and 5.

Estimates of kappa for all categories should be interpreted with caution for several reasons. First, the kappa statistic is based on the assumption that observations are independent. This assumption is violated by the fact that the data were "sprayed" to allow for protocol alignment; that is, each observation lasting more than one second was repeated by the number of seconds it lasted.

Table 3

Kappa (K) and Proportion of Agreement (PA) Estimates for Categories Describing the Interactional Context in which Touches Occurred and Touch Incidence

Categories	Interobserver Agreement				Intraobserver Agreement					
	Check #1 (3 Obs.)		Check #2 (3 Obs.)		Observer #1		Observer #2		Observer #3	
	K*	PA	K*	PA	K*	PA	K*	PA	K*	PA
Type of Attending	.95	.96	.63	.76	.37	.64	.65	.78	.99	1.00
Proximity	.86	.92	.68	.84	.92	.98	.60	.75	.78	.86
Nurse-Patient Dialogue	.69	.85	.74	.80	.85	.91	.71	.83	.91	.94
Nurse Activity	.75	.83	.38	.48	.71	.77	.65	.77	.31	.44
Eye Gaze	.71	.81	.57	.75	.91	.94	.64	.78	.61	.85
Patient Condition	.94	.98	.90	.96	.95	.99	.86	.90	.98	.99
Others in Room	.95	.99	.85	.96	.98	.99	.80	.90	1.00	1.00
Touch Incidence	.92	.96	.77	.93	.96	.98	.80	.87	.91	.96
MEAN	.85	.91	.69	.82	.83	.90	.71	.82	.81	.88

* All kappas $p \leq .00001$

Table 4

Kappa (K) and Proportion of Agreement (PA) Estimates for Categories Describing the Touch Event

Categories	Interobserver Agreement				Intraobserver Agreement					
	Check #1 (n=107)		Check #2 (n=105)		Obs #1 (n=80)		Obs #2 (n=96)		Obs #3 (n=51)	
	K	PA	K	PA	K	PA	K	PA	K	PA
Initiator of Touch†	.42*	.83	.00	.69	.55*	.91	.30*	.68	.19	.76
Parts of Body used to Touch										
Left - Unable to determine	-	-	-	-	-	-	-	-	-	-
Left fingers	.90*	.93	.44*	.70	.84*	.94	.90*	.93	.63*	.70
Left hand	.70*	.77	.42*	.70	.95*	.97	.00	.00	.46+	.56
Left arm	-	-	-	-	.90*	.93	-	-	-	-
Left trunk	-	-	-	-	-	-	-	-	-	-
Left other	-	-	-	-	-	-	-	-	-	-
Right - Unable to determine	-	-	-	-	-	-	-	-	-	-
Right fingers	.70*	.89	.50*	.72	.75*	.78	.72*	.91	.72*	.92
Right hand	.50*	.73	.49*	.70	-	-	.85*	.93	.73*	.91
Right arm	-	-	.57*	.62	-	-	-	-	-	-
Right trunk	-	-	-	-	-	-	-	-	-	-
Right other	-	-	-	-	-	-	-	-	-	-
Gloves	-	-	-	-	-	-	-	-	-	-
MEAN	.70	.83	.48	.69	.86	.91	.62	.69	.64	.77
Location of Touch										
Face	-	-	-	-	-	-	-	-	-	-
Neck	-	-	-	-	-	-	-	-	-	-
Fingers	.74*	.79	-	-	-	-	.24°	.32	.92*	.97
Hand	.34*	.43	-	-	-	-	1.0*	1.0	.80*	.92
Forearm	.95*	.96	.44*	.48	1.0*	1.0	.97*	.98	-	-
Elbow	-	-	-	-	-	-	-	-	-	-

Table 4 (continued)

Categories	Interobserver Agreement				Intraobserver Agreement					
	Check #1 (n=107)		Check #2 (n=105)		Obs #1 (n=80)		Obs #2 (n=96)		Obs #3 (n=51)	
	K	PA	K	PA	K	PA	K	PA	K	PA
Upper Arm	-	-	.85*	.90	-	-	-	-	-	-
Shoulder	-	-	.46*	.53	-	-	-	-	-	-
Upper Trunk	-	-	.57*	.64	.96*	.97	-	-	-	-
Lower Trunk	-	-	-	-	-	-	-	-	-	-
Thigh	.68*	.70	-	-	-	-	-	-	-	-
Knee	.61*	.63	.61*	.72	.97*	.99	1.0*	1.0	-	-
Lower Leg	.78*	.82	.89*	.92	-	-	-	-	-	-
Foot	.65*	.76	-	-	-	-	-	-	-	-
MEAN	.68	.73	.64	.70	.98	.99	.80	.83	.86	.95
Verbal Message with Touch	.40*	.66	.50*	.64	.31+	.64	-.01	.48	-.07	.39
Type of Touch	.52*	.79	.54*	.65	.88*	.94	.71*	.82	.59*	.75

* $p \leq .00001$
\+ $p \leq .0005$
° $p \leq .01$
† Insufficient variation of data for accurate kappa calculation

Second, no margin for error was allowed in estimating agreement; therefore, the criterion for agreement is quite stringent. This meant that if two observers recorded the same event which lasted for one second and were one second apart on the onset times this one second disagreement would be counted as a disagreement. Thus, lower kappas could be expected for events of short duration.

Third, depending on the events that occurred, some codes within certain categories were not used. This is true for some codes indicating the part of the body used to touch and for codes indicating the location of touch (as denoted by blanks in the tables). Other codes were used very rarely in these agreement checks. Because these observations did not meet the minimum sample-size requirements described by Cicchetti (1984), agreement statistics were not reported. For example, a touch on the upper trunk lasting one second occurred once in the three interactions coded by observer #2 (to determine intraobserver reliability). To adequately assess observer agreement on less frequent codes would have required a considerable amount of time and expense by having observers independently code a much larger number of interactions. Also, random selection of interactions to include in agreement checks did not guarantee that interactions selected would include events that equally represented all categories.

Fourth, when the variability in the codes used decreased, the kappa statistic became less sensitive in estimating agreement. For example, in the interactions randomly selected for interobserver agreement #2 in the category of touch initiator, the nurse initiated the majority of the touches, resulting in a markedly skewed distribution. In only 18 of the 105 observations were codes other than nurse-initiated touch used by one or more observer. The resulting kappa of .00 did not accurately reflect the agreement in this category. In this instance, proportion of agreement provides a more accurate estimate (G.P. Sackett, personal communication, September 3, 1991).

Finally, while it could be assumed that all interactions would be equal in relation to the ease with which behaviours could be distinguished in order to identify appropriate codes, this

was not the case. Interactions varied greatly with respect to the frequency and duration with which behaviours of interest occurred; consequently, the demands on the observer could be quite different from one interaction to the next. Other factors such as lighting and position of the nurse in relation to the patient could also make it more difficult to code some interactions. Thus, observer agreement could potentially vary simply because of the types of interactions selected for checks.

The range of possible values of kappa is between -1 and +1. Negative values indicate that agreement between observers is less than the level expected by chance. A kappa of zero indicates that observed agreement does not exceed chance. A kappa coefficient of ≥0.60 has been suggested as indicating an acceptable level of agreement (Cicchett, 1984). Using this criteria, agreement on each of the categories used in the observational schedule will be discussed, beginning with categories that were used to describe the interactional context and touch incidence.

Type of Attending. Agreement statistics for the category "type of attending" showed some decline from the first check on interobserver agreement to the second, although they were acceptable. The first check was completed on interactions from data set #1, so it could be expected that the cases were clearer examples of the types of attending than those interactions in data set #2, which were used in the second check. Although the code of *doing tasks* was not represented in the data selected for the second check, the other codes within this category showed acceptable levels of agreement. Intraobserver agreement for this category was acceptable. The kappa statistic is low for observer #1 due to a lack of variability in the data. In the interactions coded by observer #1, only one unit of attending, lasting approximately 66 seconds, was coded differently than on the first occasion.

Proximity. Checks on agreement related to proximity of the nurse to the patient were acceptable. The lowest agreement statistics were in the intraobserver check for observer #2. However, these results need to be considered in light of the fact that the disagreements were in one interaction in a period that lasted 58 seconds. Most disagreements occurred between

the codes of intimate-not close and personal. Despite this, levels of agreement in relation to these two codes as well as the social proximity code were acceptable in the majority of the checks. There were insufficient observations of the intimate-close proximity in all checks to evaluate observer agreement.

Nurse-Patient Dialogue. Checks on observer agreement related to this category indicated consistent observations between and among observers. Codes related to silence, care talk, and social talk resulted in kappas greater than .60. However, interobserver agreement on emotional support did not reach this level (kappa = .49, proportion of agreement = .51). This result needs to be considered in light of the fact that this type of dialogue did not occur in the first interobserver check and only infrequently in the second check (occurring in nine percent of the observations). In the only intraobserver check (observer #2) in which emotional support occurred, the kappa was .70.

Nurse Activity. Agreement statistics related to "nurse activity" show some variability across checks, including a decay in observer agreement between the first and second interobserver check. While some codes in this category were used consistently by the observers in most checks (e.g., giving medications, adjusting the environment, assisting with movement, caring for intravenous or subcutaneous sites), other codes were not. Several reasons can be suggested for this. First, because nurses often did several activities at once (e.g., checking while giving medications) and some combinations were more subtle that others (e.g., giving emotional support while checking), as the complexity of the activity increased, the potential for differences in the way observers coded these events also increased. When disagreements related to combinations of activities were examined, it was found that often observers consistently recognized one activity (e.g., giving medications) but disagreed on whether an additional activity was occurring at the same time. Second, since nurse activities that might on the surface appear to be a simple and straightforward did not always fit into the same classifications across all situations, the task of classifying activities was not always easy. For example, when the nurse responded to the patient's request to

"turn up" the head of the bed, the observer coded this activity as "adjusting the patient's environment" the first time she observed this interaction. In many contexts, this would have been an appropriate classification; however, because in this particular situation the patient had requested this to help relieve the shortness of breath he was experiencing, the activity should have been coded as "non-pharmacological symptom management," something that the observer noted when this same interaction was recoded for an intraobserver check. Third, it is important to note that sound is lost when the videotape is in frame advance or slow motion. Therefore, despite repeated review of interactions, some "clues" that might have assisted observers in coding nursing activity were not always present. Fourth, some of the disagreement in relation to nurse activity can be attributed to observer decay in the way that observer #3 used the code "checking." This, in part, explains lower proportion of agreement scores for nurse activity on the interobserver #2 and the intraobserver #3 check.

Eye Gaze. Checks on interobserver and intraobserver agreement on eye gaze demonstrated that observers consistently recognized variations in eye gaze, with only one kappa falling below .60. The lower kappa on the second interobserver check was likely related to the difficulty in judging eye gaze in one of the interactions due to the position of the nurse in relation to the cameras and poor lighting in the room. The category of inferred eye gaze was only used frequently enough in the second interobserver check to assess agreement. In this check, the proportion of agreement was .62, and the kappa was .53. Kappas for the remaining codes were acceptable.

Patient Condition. Proportion of agreement and kappa statistics related to patient condition reflect high levels of agreement on all checks. The kappas for three codes (i.e., physical discomfort, comfortable-eyes open, and comfortable-eyes closed) were consistently high across all checks (kappas = .76 to 1.00). However, the code for emotional discomfort was used infrequently in these checks. The only check to include this code was the intraobserver check for observer #2, which resulted in a kappa of 1.00.

Others in Room. In most of the observer checks, no other person was present in the patient's room in addition to the patient and nurse engaged in the interaction. However, when visitors were present, as happened in the intraobserver check for observer #1, the level of agreement was high (kappa = .97).

Touch Incidence. Observers consistently recognized scorable touch events across all checks, with kappas ranging from .77 to .96, reflecting fair to excellent levels of agreement. In summary, levels of agreement on categories used to describe interactional context and touch incidence were satisfactory with few exceptions. Agreement in relation to the categories used to describe touch events is evaluated in the following section.

Initiator of Touch. Because the majority of touches were nurse initiated, the data lacked variability with respect to this category. The proportion of agreement statistics are, therefore, a more accurate reflection of the levels of agreement achieved. Based on these results, all of the agreements are over .70 except for interobserver check #2 and the intraobserver check for observer #2. Since a large proportion of the disagreements in these checks were related to misses in recording the touch event or decisions regarding the scorability of the touches, the agreement was evaluated as adequate.

Parts of Body Used to Touch. Agreement statistics were not available for all categories as they were used too infrequently or did not occur at all in the touch events selected for these checks. Although the results vary greatly between checks, the patterns of disagreement are not dissimilar. The majority of disagreements in the interobserver checks were related to misses or decisions relating to whether touches were considered scorable or not. Other disagreements were related to coding errors in relation to left and right and difficulties in determining in some instances whether the hand was involved in the touch event or not. The low kappas for intraobserver #2 and #3 in relation to the use of the left hand are based on a relatively small number of touch events and reflect misses or differences in determining if the touch was scorable rather than what part of the body was used to touch. Agreement statistics

were averaged to obtain overall scores. These were all at an acceptable level, with the exception of interobserver check #2.

Location of Touch. Checks on agreement with respect to location of touch were limited to the extent that not all body locations were used in the interactions selected for the checks. However, agreement on locations that were used frequently (i.e., for at least 10 observations/seconds) were at acceptable levels, with a few exceptions. The low kappas for the hand location in interobserver check #1 and the forearm location for interobserver check #2 are related to misses or disagreements on whether the touches were scorable rather than disagreement regarding location. A coding error resulted in the low kappa for the location of fingers in intraobserver #2 check. Agreement statistics were averaged to obtain overall scores. The results indicate that acceptable levels of agreement were reached on all checks.

Verbal Message with Touch. With the exception of interobserver check #2, kappa statistics in relation to the verbal message category have been influenced by reduced variability in the codes that were used in these checks. As such, proportion of agreement statistics provide a better indication of agreement for this category. A major factor influencing agreement in all checks is the number of touch events that were not observed by one or two of the three observers. The observers may have missed them or, alternatively, decided that the touch was unscorable. In interobserver check #2, these misses accounted for over 60 percent of the disagreements. When agreement statistics are completed on only those observations where all observers coded a touch event (n=74), the kappa increases to .73 and the proportion of agreement to .81. In this check, kappas for individual codes ranged from .59 to .78. These results indicate that when observers all coded a touch event their was a fair level of agreement. Differences observed in classification of verbal messages by observer #2 (in relation to codes 2 and 3) and observer #3 (in relation to codes 1 and 3) as well as a coding error by observer #2 account for low levels of agreement in these checks. However, the decay that appeared in these two intraobserver checks did not seem to be a factor that

influenced the agreement in interobserver check #2, so it may be particular to the interactions selected for these checks.

Type of Touch. The levels of agreement with respect to type of touch were influenced considerably by lack of variability in the data and missing data on the part of one or two observers. When only the events that were coded by all observers were considered, there were only 12 disagreements (14%) in interobserver check #1, 15 disagreements (20%) in interobserver check #2, 2 disagreements (2%) in intraobserver check #2, and no disagreements in intraobserver checks #1 and #3. When only those touch events that all observers had coded were considered, for example, in interobserver check #2, the kappa increases from .54 to .66 and the proportion of agreement from .65 to .75. Therefore, the level of agreement in relation to this category was judged to be satisfactory. Although there was insufficient data in all checks to assess agreement with respect to orienting and social touches, when touches of these types did occur in the interobserver check #2 and the intraobserver check for observer #3, there was a high level of agreement.

Form/Intensity of Touch. Agreement statistics for form and intensity of touch are presented in Table 5. The forms of touch that appeared most frequently in the agreement checks were non-move, rub, hold, and strike, although the number and duration of touches described by these forms varied considerably among the different agreement checks. Light and medium intensities were most commonly used in these checks. Firm intensities occurred primarily with holding and rubbing forms of touch.

The results must be considered in terms of the frequency with which these forms of touch were used. Not all types of forms used met the minimum sample size requirements of 20 with three categories (i.e., when form and intensity are combined) and 10 with two categories (i.e., with form alone), which has been suggested by Cicchetti (1984). Nevertheless, agreement with respect to form/intensity was low in most cases. Difficulties in achieving agreement related to intensity was a contributing factor. When agreement in relation to just the form of touch was considered (i.e., without consideration for intensity),

the overall interobserver kappas increased from .45 to .54 and .55. Kappas for the categories of rub, hold, and palpate reached fair levels of agreement, ranging from .65 to .71; while kappas for forms of non-move and strike reached levels of .49 and .44, respectively. Patterns of disagreement in the form/intensity statistics also show that misses by one or two observers was a problem, especially when touch events lasted one second or less. This pattern was particularly evident with the form "strike" (which commonly occurred in the form of light taps or bumps lasting less than one second) and, in part, explains the low kappa in the first interobserver check. These touches could be easily missed by an observer, or alternatively, differences in onset times would make it appear as if one observer had missed the touch. As observers gained more experience in recognizing and timing these touches, this became somewhat less of a problem, as indicated by an increase in the kappa in the second interobserver check. "Strikes" were not usually confused with other forms of touch. Consistency in discrimination of light and medium intensities in relation to strikes was good.

The agreement statistics in relation to non-moving forms of touch were variable. When all observers recognized the touch event, disagreement was most often related to the fact that one or more observers classified the same light intensity touch as "non-moving," while another classified it as a "hold." This is explained by the fact that these are both stationary forms of touch, the difference being that holding involves partial or complete encirclement of a body part. At times, it may be difficult to determine if the hand is partially encircling a body part or just in contact with it. The low agreement statistics in relation to "non-move" and "hold" for intraobserver checks for observer #2 and #3 reflect this problem. Agreement on intensity in relation to non-moving forms of touch was more of a problem in the second interobserver check than the first. When agreement on form was considered without consideration for intensity, the kappa in the second interobserver check increased from .24 to .49.

Table 5

Kappa (K) and Proportion of Agreement (PA) Estimates for Form and Intensity of Touch

	Inter-observer Agreement						Intra-observer Agreement								
	Check #1			Check #2			Observer #1			Observer #2			Observer #3		
	n**	K	PA	n	K	PA	n	K	PA	n	K	PA	n	K	PA
Non-move	6s[6e]			71s[15e]			58s[6e]			59s[4e]			34s[3e]		
Form/Intensity:															
Light		.48°	.50		.07	.31		.91°	.97		-.20	.00		-.06	.00
Moderate		.50°	.50		.06	.28		-	-		-.73	.00		-.47	.00
Firm		-	-		-	-		-	-		-	-		-	-
Form Only		***.48°***	***.50***		***.49°***	***.74***									
Press	0			3s[2e]			2s[1e]			0			0		
Form/Intensity															
Light		-	-		-	-		-	-		-	-		-	-
Moderate		-	-		.24°	.25		-.01	.00		-	-		-	-
Firm		-	-		-	-		-	-		-	-		-	-
Form Only		-	-		***.24°***	***.25***									
Palpate	15s[5e]			0			3s[2e]			0			0		
Form/Intensity															
Light		-.02	.00		-	-		-.02	.00		-	-		-	-
Moderate		.35°	.41		-	-		-.02	.00		-	-		-	-
Firm		-	-		-	-		-	-		-	-		-	-
Form Only		***.71°***	***.74***		-	-									
Rub	52s[21e]			32s[18e]			8s[8e]			4s[4e]			9s[7e]		
Form/Intensity															
Light		-.03	.00		.28°	.31		.30°	.33		.49°	.50		-.05	.00
Moderate		.75°	.81		.61°	.67		.47°	.50		1.00°	1.00		.33°	.40
Firm		-	-		-	-		-	-		-	-		-	-
Form Only		***.65°***	***.75***		***.71°***	***.77***									
Hold	64s[24e]			33s[13e]			6s[3e]			58s[4e]			35s[5e]		
Form/Intensity															
Light		-.02	.00		.30°	.36		-.01	.00		-	-		-	-
Moderate		.39°	.52		.78°	.80		-.02	.00		-.37	.04		-.34	.16
Firm		.51°	.62		.25°	.29		-	-		-	-		-	-
Form Only		***.66°***	***.81***		***.56°***	***.65***									
Strike	19s[14e]			9s[7e]			7s[7e]			2s[2e]			2s[1e]		
Form/Intensity															
Light		.08	.13		.39°	.40		.41†	.44		.66°	.67		-.01	.00
Moderate		-.02	.00		.48°	.50		-.02	.00		-	-		-.01	.00
Firm		-.01	.00		-	-		-	-		-	-		-	-
Form Only		***.18†***	***.24***		***.44°***	***.47***									
Wrap	0			0			2s[1e]			0			0		
Form/Intensity															
Light		-	-		-	-		-	-		-	-		-	-
Moderate		-	-		-	-		-	-		-	-		-	-
Firm		-	-		-	-		1.0°	1.0		-	-		-	-
Form Only		-	-		-	-									

** number of seconds [number of touch events]

° $p \leq .00001$

† $p \leq .0001$

° $p \leq .01$

Observers consistently used the form "rub" and moderate intensity to describe touch events. When disagreements occurred, they were related to short touches (i.e., one second or less), with some observers classifying these touches as non-moving touches. It may be that in these instances some observers were recognizing the rubbing (albeit very brief) that may precede some non-moving touches as they are applied, while others were not recognizing this as a separate motion.

Agreement with respect to the forms of press and wrap could not be adequately assessed as these appeared very rarely in these checks. However, wrapping forms of touch were not difficult to identify, and there is some indication of this in the intraobserver check for observer #1. Touches of a pressing form did not occur frequently in the entire data set, and as coding proceeded, it was decided that this form was really an instance of a non-moving touch with moderate or firm intensities. Observers continued to use this code, but during data analysis, press and non-moving forms of touch were collapsed.

In summary, when all observers recorded the touch event, levels of agreement with respect to the description of touch events are adequate for most categories, and agreement on the intensity of touch is inadequate.

Duration of Touch. The duration of touch was calculated from recorded onset and offset times (in seconds) of each touch event. Since this category was unsuitable for kappa calculation, generalizability coefficients were calculated for touch events that were not missed by one or more observers (see Table 6).

Although it appears that as the observers gained more experience in recording duration of touch the reliability of the measure improved, the variability of duration of touch due to the observations themselves in these two checks also influenced the results. The variance of duration due to observations (i.e., cases) was .93 in the first check and 3.712 in the second. Variance due to the interaction between observations and raters was virtually the same for both checks (2.04 and 2.50, respectively). Therefore, in the first check, any interaction between observations and raters tends to make the measure look unreliable. Intraobserver

checks for observer #1 and #2 are satisfactory. The results for the third observer are disappointingly poor; however, the number of touch events included in the interactions selected for this check was low.

Table 6

Generalizability Coefficients for Duration of Touch

	Interobserver Checks		Intraobserver Checks		
	#1	#2	Obs #1	Obs #2	Obs #3
Number of Touch Events	25	21	28	15	9
Generalizability Coefficient	.31	.60	1.0	.67	.00

Interobserver Reliability

Generalizability theory was used to estimate the extent to which the observed ratings were confounded with error. Ten categories from the observation schedule were included in this analysis (see Table 7). The results indicate that the reliability of these measures was adequate with one exception—that of nurse activity. Although variation due to observers was reflected in agreement statistics for this category (kappa = .38, proportion of agreement = .48), it is also clear from this analysis that a large proportion of the variability was also related to the observations themselves. Considering this source of variability, the large number of codes that were used for nursing activity, and given the previously discussed complexities involved in coding nursing activities, the low generalizability coefficient is not surprising. Nonetheless, on the basis of these results, the reliability of data related to nurse activity is questionable.

Table 7

Generalizability Coefficients for the Second Interobserver Check

Category	Variance due to Observations	Variance due to Interaction Between Observations and Observers	Generalizability Coefficient
Type of Attending	.481	.280	.63
Proximity	.583	.107	.85
Nurse-Patient Dialogue	3.554	1.153	.76
Nurse Activity	16.372	20.428	.45
Eye Gaze	.501	.419	.55
Patient Condition	1.062	.0	1.00
Others in Room	10.923	.0	1.00
Touch Incidence	.122	.019	.87
Verbal Communication	.727	.249	.75
Touch Type	3.058	1.131	.70

The reliability of eye gaze is also low. However, in light of the fact that eye gaze could change very quickly and the fact that no margin for error in onset times was used, this result is a conservative measure of the reliability of eye gaze. The influence of variability within observations as well as the consistency with which observers code observations on reliability needs to also be considered. Since there is a fairly low amount of variability associated with observations of eye gaze, any interaction between observers and observations tends to make the measure look unreliable. With these considerations, the reliability of eye gaze was considered acceptable.

A high level of agreement was not always necessary to ensure that measures were reliable in the sense of traditional test theory. For example, despite the fact that observer agreement for proximity was moderate (kappa = .68), the reliability was high (generalizability coefficient = .85). This result indicates that the data coded by each observer were equally effective in distinguishing between observations (i.e., time intervals) and that agreement within time intervals did not need to be high for this to occur.

In summary, these findings indicate that acceptable levels of inter- and intraobserver agreement were established and maintained throughout the coding process with the exception of nurse activity and intensity of touch. Interobserver reliability results indicate that for nine out of the ten categories included in this analysis the results could be replicated with observers with similar training.

IV. RESULTS: PATTERNS OF INTERACTION AND KINDS OF TOUCH

The Sample

The total sample of nurse-patient interactions on which this study is based is shown in Table 8. The number of interactions videotaped with each patient varies in relation to their needs for nursing care and the number of times the recorders were requested to be turned off. The recorders were requested to be turned off more frequently with patient #2 as one staff member who was assigned to this patient did not wish to participate in the project. This problem was subsequently rectified by having this staff member assigned to other patients during data collection periods.

Table 8
Description of Videotaped Nurse-patient Interactions (NPIs)

Patient	Number of videotaped NPIs	Number of patient/family requests to turn recorders off	Number of staff requests to turn recorders off (Nurse/Other)	Average duration of NPIs (minutes)
1	152	1	2/0	2.59
2	116	3	27/1	2.40
3	101	3	9/1	1.69
4	181	0	3/0	2.04
5	139	1	1/1	1.68
6	134	8	6/1	1.71
7	131	0	1/3	1.49
8	131	0	2/2	1.57
Total Sample	1085	16	51/9	1.90*

* Mean of the eight average durations of NPIs

A total of 116 nurse-patient interactions that included touch events were coded: 56 purposefully selected interactions for a duration of 236.56 minutes in data set #1 (mean duration of each observation was 6.9 seconds) and 60 randomly selected interactions for a duration of 245.71 minutes in data set #2 (mean duration of each observation was 5.2

seconds). Interactions ranged from 36 seconds to 19.16 minutes, with a mean of 4.18 minutes (s.d.= 3.45) in data set #1 and 4.08 minutes (s.d. = 3.62) in data set #2. These interactions were segmented into units of behaviour reflecting the four different types of attending: *doing more*, *doing for*, *doing with*, and *doing tasks*.

Types of Attending

Qualitative Description

Four types of attending were identified from the videotaped interactions and used to describe the interactional context of the touch events. These types of attending could be initiated by the nurse or stimulated by the patient's verbal or nonverbal behaviour. Although nurses and patients were not asked directly to comment on the types of attending during interviews, data from these interviews provided some support for this classification and insight into these types of attending from the perspective of both patients and nurses. Excerpts from the data, in the form of transcripts, are included in this chapter to demonstrate how the characteristics of each type were played out in everyday interactions between nurses and patients. These examples are limited to the extent that they emphasize the verbal interaction and underplay the contribution of nonverbal behaviours.

Doing More

Comments by nurses about some of their interactions with patients seemed to fit with a *doing more* type of attending. Their comments underlined the importance of focusing on the patient as well as the factors which influenced engagement with patients:

> I think it's important to try to direct as much as you can towards them [patients] ...and I know in nursing it's really hard because you have so many demands....You've got to be careful you don't get caught up in nursing technicalities.

The engaged interaction that was characteristic of *doing more* was often referred to by nurses as being "close" to patients. Factors that nurses identified that influenced how "close" they were able to get to patient and when they chose to be "close" included how well they knew the patient, how comfortable the patient was with them, the intimacy of the

nursing care that they provided, their workload, whether the patient had any immediate family to support them, and the level of patient distress.

The following excerpt from one interaction provides an example of a *doing more* type of attending. This interaction occurred at 10:14 PM as the nurse helped the patient settle for the night:

> Patient: Well, what I'd like to do is—I'd like to rinse with that first but maybe I'll do it after. If you could just put powder on me.
> Nurse: Sure.
> Patient: It makes it a lot easier that way than me trying to fiddle and fool…
> Nurse: O.K.
> Patient: I can't, I can't see where to get it properly, and…
> Nurse: And you just like the baby powder, eh?
> [The nurse begins to rub powder on radiation area on patient's neck.]
> Patient: That's all we've, that's all we've been putting on.
> Nurse: It's sore? Is it sore now?
> Patient: No. It just kind of burns.
> Nurse: Yeah.
> Patient: Burns, burns and itchy. [Pause as the nurse continues to rub powder on patient's radiation area.] Oh well. Just two shots to go.
> Nurse: Mm hmm. How many, how long has this been?
> Patient: Thirty-four shots.
> Nurse: You've sure done well.
> Patient: Yeah. Considering.
> Nurse: Mm hmm. [She continues to rub powder on patient's neck and lower face.]
> Patient: I didn't think it would be this is bad. I guess maybe a lotta people are maybe worse off than I am when it comes to that.
> Nurse: That's right. There are. There's always something, isn't it? There's always someone worse off than yourself.
> Patient: Yeah. Yeah. I'm not gonna complain. I've never complained since the day….
> Nurse: I bet you haven't.
> Patient: No [pause] What for?
> Nurse: Ah, well sometimes it makes you feel good. It makes me feel good sometimes.
> Patient: Yeah. Well thank you for the opportunity. That sounds strange but, that's O.K.
> [The nurse finishes with the powder.]
> Nurse: O.K.
> Patient: Thank you.
> Nurse: You're welcome.

The nurse did not have much direct eye contact with the patient during this interaction because she was applying powder; however, while accomplishing this task, she made herself available to the patient, providing the opportunity for the patient to express his

feelings without complaining. Patients appreciated this type of personalized care, and one patient's comments are particularly informative:

> You know, nobody enjoys being in the hospital, but if they [nurses] are caring, they can certainly make you feel, well not really good about it but more relaxed and more comfortable. And it eases your anxiety. Because you've got lots of time to think....If they can help you bridge that problem that you have then, you know, your anxiety and being depressed, it means a lot to a patient. It may not cure your illness, but it certainly helps.

Doing For

In the interviews, nurses talked about trying to be "more personable and friendly" by doing "a lot of little things" for patients, the things they believed would help patients feel more comfortable in a hospital environment. At these times, they tried to keep the patient's surroundings neat and uncluttered, put things within easy reach, helped patients find comfortable positions, assisted with their grooming, provided extras such as colourful quilts, rubbed their legs or backs, or just took the time to chat about anything that interested the patient. Nurses commented that during these interactions they tried to give patients as much control as possible, a point that some nurses believed was very important considering that much of the time patients had very little control over the care they were receiving (e.g., when they took medications or went for radiation treatments). These comments and the following excerpt reflect the type of interaction that would be characteristic of *doing for*:

> Nurse: I'm just going to get you one of those little bowls for doing your teeth, O.K.?
> Patient: Yup.
> Nurse: Do you wanna put your, slip your T-shirt on or . . .? [reaches for T-shirt.]
> Patient: Yup. I think I'm gonna stash one of those before I leave this place.
> Nurse: Like those do you? [Both laugh.]
> Patient: Because, they're, they're nice in the winter time, eh? When I come, when I come home from work—I don't come home from work anymore, but, ah, that's what I wear. Just a T-shirt.
> Nurse: T-shirt.
> Patient: T-shirts and...%[1].
> Nurse: Yeah.
> [Patient puts on his T-shirt.]
> Patient: O.K. I don't need to lay down here any more anyway.

---

[1]% indicates that dialogue could not be heard clearly enough to be transcribed.

[Patient sits up on the side of the bed.]
Patient: Sheeahhh.
Nurse: It's sharp.
[Nurse tidies up room a little and helps patient fix his shirt up.]
Patient: That's beautiful out there today.
Nurse: It's crisp, but it's nice.
Patient: Oh boy.
Nurse: And I will get a little thing for you to spit the toothpaste in, O.K.?
Patient: Yeah. Right.
[Nurse returns with a kidney basin.]
Nurse: There ya be.
[Nurse tidies up room a bit more.]
Nurse: Is there anything else for now, or . . .?
Patient: Uh, nope.
Nurse: O.K.
[Patient gives nurse some used towels.]
Nurse: Want to save that one?
Patient: Yeah. I always save a spare towel. I always save a spare towel.
Nurse: O.K.
Patient: You betcha.

Patients appreciated the friendly way that nurses did things for them and the times, no matter how short, that nurses spent "just chatting":

> She [the nurse] talked to you, and she did things for you...not because it was her duty, but because she enjoyed doing it for you. And it made you feel like you're not imposing on her, you're not an imposition, and you didn't mind asking her to do things for you. That's very important. Because you don't want to feel like you're a burden. You feel bad enough being in the hospital without being made to feel that you are a burden. I know I do because I've always been able to do things for myself, and it's pretty hard for me to accept the fact that I had to let go and let people do things for me.

Doing With

Nurses believed it was important to keep patients informed about issues related to their care, and at the same time, they encouraged patients to keep them informed about how they were feeling, how the treatments were affecting them, or the effectiveness of symptom management strategies. This sense of working together was most clearly reflected in the *doing with* type of attending. In the following excerpt, the patient has requested a hot pack for abdominal discomfort, and the nurse returns with the hot pack and a sphygmomanometer:

Nurse: Feeling any better?
Patient: Oh yeah. Some yeah.
Nurse: Need this?
Patient: Oh, ya. It's just, just ah, it comes upon you, eh?

[The nurse applies hot pack to patient's abdomen.]
Nurse: Just have to take your blood pressure and temperature.
[The nurse starts to put on the BP cuff.]
Nurse: When did this last happen?
Patient: Oh, it happens, well, almost once a day.
Nurse: You think it's related to your feeding?
Patient: Oh yeah.
Nurse: You think it's because you're getting overloaded?
Patient: I think it wants to move, yeah.
[The nurse proceeds to take patient's blood pressure.]
Nurse: It's O.K. anyway.
Patient: Oh yeah. It's just I feel kinda finicky.
[The nurse nods and removes BP cuff. The patient rubs his forehead.]
Nurse: Feel as if you want to throw up?
Patient: No.
Nurse: No? Just sweaty.
[The nurse takes the patient's temperature and then moves to other side of the bed.]
Nurse: Now, just let me flush this through so that it doesn't…get blocked on ya. [The nurse hooks up tubing to flush the G-tube]
Nurse: Does the hot pack help?
Patient: Yeah. Maybe.
[Silence as the nurse continues to work with tubings. She then takes patient's pulse.]

The verbal interaction in this situation was accompanied by sustained eye gaze, and although physical contact was limited to those associated with nursing care procedures, the touches were substantially more than just a few brief contacts. For example, when the nurse placed the blood pressure cuff on the patient's arm, she provided extra support to the arm as she did this.

Some patients indicated that they could recognize whether nurses were sincere in the concern they showed by the degree to which and the way that nurses involved them in their care. At times, their comfort depended on it. For example, one patient who had a pathological fracture of her hip was frequently consulted about how transfers (e.g., from bed to chair) could be conducted. Even though she would let nurses know how it worked best for her to minimize discomfort, she still appreciated being informed about the nurse's plans for the next step as they proceeded:

> They tell you exactly what they're going to do and why they're going to do it…it makes you feel so much more comfortable and confident, that you know everything's going to be all right…[if they do not tell you] it makes you nervous because …you sort of tense up and wonder how much it is going to hurt.

Doing Tasks

During interviews with nurses, some of their comments could be linked to the exclusive focus on tasks that is characteristic of the type of attending labelled *doing tasks*. They legitimized this focus in several ways, the first being in relation to workload. Nurses explained that some days all they had time to do was to get the work done. Their regret that this was sometimes the "reality of their work" suggests that at least in some instances this type of attending represented a minimum standard of care. Nurses also indicated that when procedures became routine for patients and they were no longer apprehensive about them, the procedures became something that just had to be done. In these instances, explanations or emotional support were viewed as no longer necessary. What nurses did not mention was that sometimes the nature of the task demanded their full attention. For example, when taking a blood pressure, it was not possible to focus on the patient or carry on a conversation at the same time. They also focused on tasks when patients were asleep or when they did not want to interrupt conversations with visitors. The type of touch was also different when nurses were concentrating on a task *as a task*. At these times, nurses were less likely to give an extra caress, stroke, or tap; instead, skin-to-skin contact was limited to that required to complete the task.

The exclusive focus on *tasks*, often to the exclusion of the patient, is reflected in the following excerpt as the nurse focuses on transferring the patient from the mobilizer to her bed, an interaction which was classified as *doing tasks:*

> [The patient is in the hallway on the mobilizer. The nurse comes into room to make sure there is a clear pathway to the bed.]
> Patient: I hope my lunch won't be cold.
> Nurse: We have a microwave.
> Patient: I've been through this quite a few times. Either my breakfast or my lunch it ends up.
> Nurse: That seems to happen.
> Patient: Oh yeah.
> Nurse: Unfortunately . . .
> Patient: No problem.
> [Silence as the nurse slowly moves patient into the room and then puts down side rails.]

Nurse: Now does this foam and everything go . . .
Patient: They're all attached. Yes. Everything goes with me. Quite a bundle.
Nurse: Yeah.
[Silence as nurse gets everything ready for the transfer back to the bed.]
Patient: I'm probably due for a breakthrough soon. It's that terrible pain in my leg and shoulders.
[Silence as the nurse continues to prepare to transfer patient. She checks over controls and then gives them a try. Nothing works.]
Nurse: What am I doing wrong?
[Nurse checks over mobilizer, puts side rail up and exits the room.]

While at times a focus on tasks was critical (e.g., when eight o'clock medications were due, nurses needed to be in a patient's room administering them), it seemed to distance the nurse from the patient; consequently, nurses were less sensitive to patient's concerns or distress as illustrated in this case example. The distancing is evident in the verbal interaction in this example as well as by accompanying nonverbal behaviours, including the lack of any sustained eye contact with the patient and the absence of any physical contact except for several brief accidental bumps as the nurse checked the bedding on the mobilizer. Although in some situations patients may appreciate and/or in other ways benefit from this type of attending, in this situation, it resulted in a delay in meeting this patient's need for pain relief.

Quantitative Description

Table 9 presents the number of each type of attending that was identified and data on the means and standard deviations of time spent in the types of attending for each data set. There were no significant differences in the total mean durations in either data set, indicating that the amount of time spent with the patient is not one of the factors that determines the type of attending used by nurses. The standard deviations for each type of attending are large, reflecting the wide variation in duration for units of attending (range = 15 to 564 seconds). The number of units of attending within each interaction ranged from 1 to 10, with an average of 2.30 units of attending per interaction in data set #1 and 2.42 units of attending per interaction in data set #2.

Table 9

Means and Standard Deviations of Time in Seconds Spent in the Types of Attending

	Types of Attending				Total
	Doing More	Doing For	Doing With	Doing Tasks	
Data Set #1					
n	18	23	49	38	129
Mean	107.6	141.3	119.6	77.6	108.7
SD	119.1	149.5	95.2	66.6	104.8
Data Set #2					
n	7	15	77	44	145
Mean	158.6	87.3	94.7	109.1	101.1
SD	122.9	62.3	87.1	112.8	95.1

Of the original 129 types of attending coded in the first data set, 52 were deleted because they did not include touch events and had, therefore, not been coded in detail. One unit of attending was classified as "other" and also deleted. Of the 78 cases that were retained, 17 were classified as *doing more*, 15 as *doing for*, 27 as *doing with*, and 19 as *doing tasks*. In the second data set, 34 of the 145 original units of attending were similarly deleted. Of the 111 that were retained, 7 were classified as *doing more*, 14 as *doing for*, 63 as *doing with*, and 27 as *doing tasks*. These units of attending were used in the following statistical analysis.

Types of Touch

Although some nurses thought that all types of touch that they used could provide comfort in some way, there appeared to be several distinct ways that touch was used in the context of caring for cancer patients. Five types of physical touches were identified from the analysis of videotaped nurse-patient interactions, and they were verified in interviews with patients and nurses. The five types of touch included comforting, connecting, working, orienting, and social touch. This typology was used in the coding instrument to classify touch events.

Comforting Touch

Comforting touch was given for the purpose of providing comfort by calming, soothing, quieting, reassuring, or encouraging. In addition, comfort may have been derived from the fact that the touch was viewed as a demonstration of a nurse's caring and concern. Used alone or in combinations with other types of touches (e.g., working touch), this touch often, but not always, occurred when patients were experiencing some degree of distress. One example of a comforting touch is illustrated in Plate 1. In this situation, the patient's mouth and throat were so sore from radiation treatments he was afraid to swallow. He had not slept well the previous night and began coughing on the phlegm that built up in his mouth and throat shortly before the nurse entered the room. When the nurse enters the room, the patient appeared distressed, partially sitting up in bed with the suction in his hand:

> Nurse: You O.K.? [walks to side of bed, leans toward patient, looks at patient and puts her hand on his]
> Patient: [Nods.] Um humm.
> Nurse: Alright. [Looks at feeding pump] You're nearly through with this. About half an hour in fact.
> Patient: [Suctions out mouth.] Yeah.
> Nurse: [Nurse looks at patient again. The patient grimaces as he tries to clear his throat.] You having problems swallowing? [Patient shakes his head and continues to suction mouth.] No?
> Patient: There's so much, you know.
> Nurse: Humm?
> Patient: There's so much more in there first thing in the morning, eh?
> Nurse: Yeah. [Nurse removes her hand.]

After viewing this segment of the tape, this nurse explained her actions this way:

> I think that when I walked in this time...my main concern was that he was really quite distressed, and I suppose I wanted to comfort him in some way. And I think that's why I touched him. I did it automatically. It was just, to me, it was just something natural....[The touch was meant to] comfort and just recognize that he was in distress.

Plate 1. An Example of Comforting Touch

The fact that the nurse looked away from the patient during this brief interaction did not seem to change or diminish the meaning of the touch for the patient or the nurse. Nurses were commonly found to be doing several things at once, and this episode is a good example. This brief check and comment on the feeding pump was hardly noticed by the patient and viewed as a "given" by the nurse. It was embedded in an interaction in which the nurse indicated her concern by remaining close to the patient, by maintaining physical contact with her hand on his, by focusing on the patient using eye gaze, albeit interrupted, and by asking questions. The patient's comments about this touch after viewing this segment of the tape seems to verify this:

> It [the touch] didn't bother me. I think it was a matter of...maybe calmness or reaching out certainly...."You're going to be O.K." or that type of thing. [Could you give a name to that kind of touch?] Just caring or something, concern.

Connecting Touch

Connecting touches appeared to be used to establish and maintain relationships with patients. During interactions, this type of touch was used to reinforce the nurse's focus on the patient and, at times, to attain and maintain the patient's attention (see first example, Plate 2). At other times, using this type of touch like one would use a handshake, nurses reinforced their connections with patients as they were leaving the room to reassure patients (see second example, Plate 2). In the interviews, nurses clearly recognized themselves as using this kind of touch. The messages they communicated by using connecting touches were described as "light-hearted" and included: "I'm here for you." "I'm here, if you need me." "I'm here, but you are managing all right." "There you go, you're all right." The following example is typical. The patient has just discussed her concerns about the feeling of numbness in her legs with the nurse, and the nurse emphasized the importance of asking for assistance when she gets up. The following extract is from the last few seconds of their interaction:

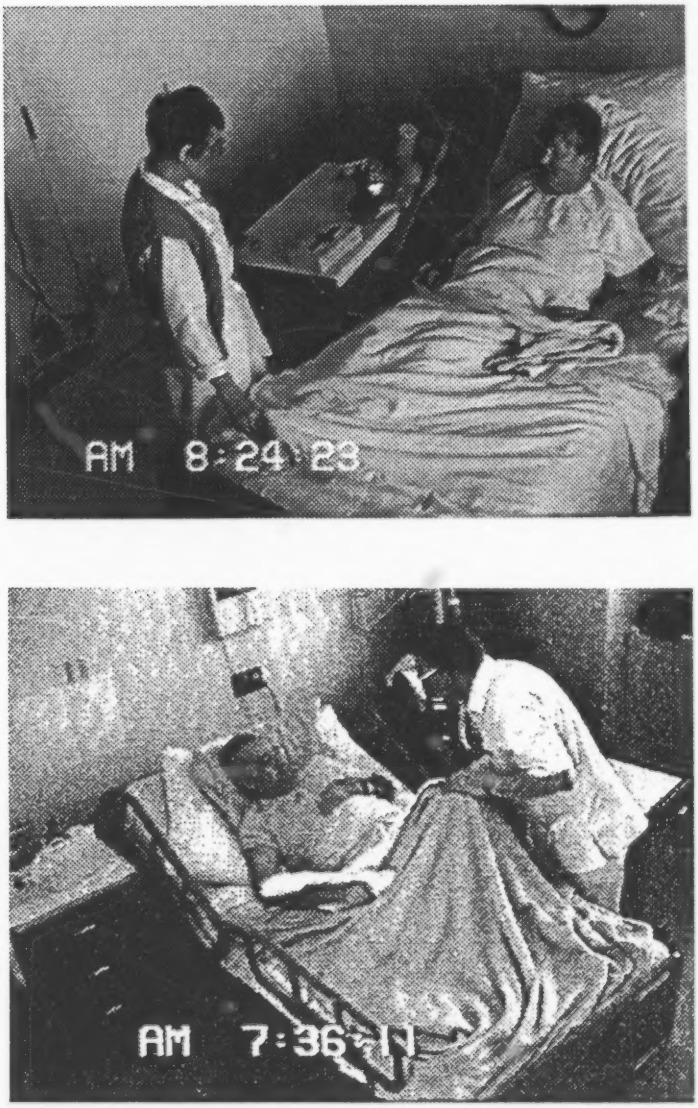


Plate 2. Two Forms of Connecting Touch

> Nurse: O.K.? All right. [Nurse squeezes patient's toes with her right hand] I'll let you have a little snooze, and I'll be back to check on you in a bit.
> Patient: O.K.
> Nurse: Anything that you need before I go?
> Patient: No.
> Nurse: O.K.
> Patient: Thank you.
> Nurse: You're welcome. [Nurse leaves.]

In this example, the verbal message that is associated with the touch gives some cues to the patient to facilitate her understanding of the touch. The intensity of the interaction is different than with comforting touches. There is frequently little or no eye contact during connecting touches, although proximity may vary. As illustrated in the second example on Plate 2, the nurse is able to make this kind of connection with patients without having to be as physically close to the patients as is the norm for comforting touches.

Working Touch

Working touches involved all the types of physical contact that were required to complete such activities as starting and maintaining intravenous or sub-cutaneous infusions, changing or checking dressings, taking vital signs, giving medications, or helping patients with activities of daily living. Most of these kinds of contacts were viewed as "technical," "routine," or "just normal" by nurses. They attached little meaning to them, except that these contacts were a necessary part of providing the care that was expected of them. One nurse who agreed with others that the touches were not important in themselves, thought that they provided opportunities for communicating with patients:

> Every physical thing that you do for a patient gives you an opportunity to communicate. It's all how you're going to use it, and whether you have time to use it at that point in your day.

Patients also viewed working touches as a necessary part of their care. Yet patients often reported that they evaluated the nurse's care and concern by the gentleness, thoroughness, and confidence with which these touches were given or the personal nature of the whole interaction in which the touch was embedded (e.g., by attending to the time the nurse was spending and/or the tone of the nurse's voice). Accidental touches (e.g.,

light bumps) that occurred during procedures were seen as insignificant, unintentional, and impersonal by both patients and nurses and were ignored.

There were some types of working touches that took on a special significance for nurses and patients. Touches that were necessary for checking (e.g., palpating intravenous sites or rubbing and palpating a patient's leg for the purposes of assessment) were viewed a little differently from other working touches. Although the primary purpose of these types of touches was still related to meeting the physical needs of the patient (i.e., in this case, an assessment), nurses thought that the way they touched and the thoroughness with which they conducted the assessment would also communicate to the patient their interest in them and might be important in helping patients derive comfort and confidence from the knowledge that everything is alright. At least one patient's comments seem to verify this idea:

> Some nurses would just take a quick look. You know, the way they checked just wasn't enough to really get any idea of what was happening at all. Whereas if they have real good look, take some of the tape off and make sure that it's not actually doing something, it makes you feel better if they are actually doing something.

Within the group of working touches, nurses also recognized that some of these touches were important in comforting patients, not so much because of the message that they communicated, but by the nature of the physical contact itself. For example, rubbing a patient's back, legs, and feet for the purpose of washing or providing skin care, rubbing a subcutaneous site, or washing a patient's face were working touches that were viewed as "actual" comfort measures, touches that would help reduce aches and pains or refreshen. It was these kinds of working touches, especially when they were viewed as "extras," that nurses thought demonstrated their caring and concern:

> I think it's for her comfort, but I think, it's a means to show her that I care and that I'm, not, like I, although I'm busy, I have time to do that and I want to do it. Because a lot of times people say to you, "Oh you're too busy. You don't have to do that," and I go, "No, but I can. I'll take time," you know. And so it shows them that you do care. I mean, you are sincere. You're not just bopping off meds or, you know, throwing them a wash cloth. Like, you are spending time with them even if they can do it themselves. Like a lot of times, I mean, people are mobile. They could rub their own legs if they wanted to, but it's just…it's a nice comfort

> for them. It's almost like a treatment or you know, and it brings you closer cause, I mean, they appreciate it. And they know that you don't have to be doing that but that you are.

Interestingly, it was during interactions that involved these kind of touches that patients often began to discuss some of their concerns. In the following example, a patient who has been withdrawn begins to ask some questions about her medications as the nurse rubs her back (see the first photograph in Plate 3):

> Patient: Oh. Feels so good. [Silence as the nurse continues the back rub.] This, uh, this medication uh %.
> Nurse: Oh. You're getting Maxeran, and you're getting Gravol, too.
> Patient: No. The other one. Uh, the other one. Decadron.
> Nurse: Oh yes. Yes.
> Patient: Do I have to be on it for a long time?
> Nurse: It can be.
> Patient: Yeah.
> Nurse: Um, but it's usually, uh, reducing doses. You start out higher and you know as the, it does what it's suppose to and you see the results and your headaches subside and the pressure reduces then we might start slowing it down.
> Patient: %
> Nurse: It depends. It can be fairly, you can take it orally, too.
> Patient: % [something about years]
> Nurse: Oh no. Not Decadron. [The nurse continues to rub the patient's back.]
> Patient: It's used initially to reduce the swelling?
> Nurse: Initially, yeah. Well I guess some people could be on it for a while but, you know, um, but, and then you can take it orally, too. It comes in tablets that go right down to wee little tablets. [The nurse finishes the back rub and pulls the patient's pyjama top down.]
> Patient: Mmm.
> Nurse: It's really a very good drug. It's very effective.
> [The patient half sits up on her elbow and straightens out her pyjama top.]

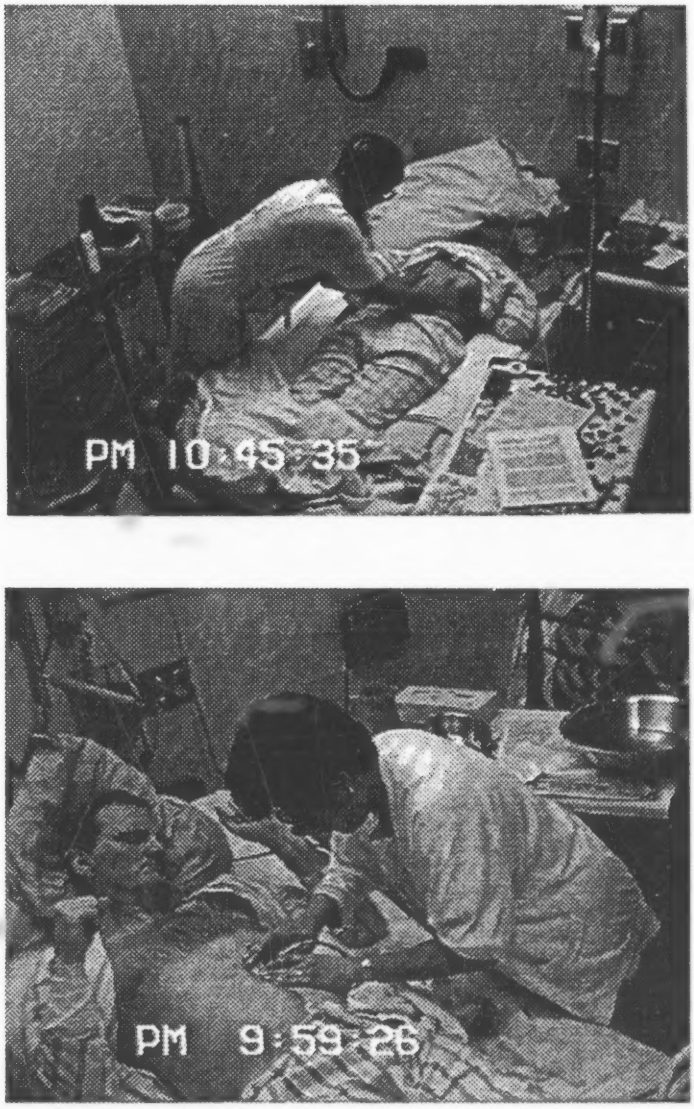


Plate 3. Examples of Working Touch

Orienting Touch

Orienting touches were similar to working touches in that they were associated with various tasks; however, the main purpose of orienting touch was to clarify. An example of an orienting touch is shown in Plate 4. In this example, the nurse was trying to determine where the patient would like her new subcutaneous site. The verbal interaction in which this touch was embedded is as follows:

> Patient: My leg is really numb this morning.
> Nurse: [touching patient's leg and foot] Which leg?
> Patient: This one.
> Nurse: This one? [taps foot]
> Patient: The foot especially.

Although these touches did not occur frequently, they were especially important when they were used during assessments. In addition, one nurse commented that these touches were helpful in building a relationship with patients as they could be used to engage patients and demonstrate the nurse's interest and concern.

Social Touch

Nurses and patients often joked with and teased one another. Touches, labelled as social touch, occasionally accompanied these brief interactions in the form of taps on the arm or light taps on the back. When nurses initiated teasing, it appeared the touches were used to reinforce the tease and, therefore, were an important part of the tease:

> Well, I think in that case we were talking about his chest tube dressings in which he had this horrible waterproof tape stuck all over his hair....And at that time I touched him and said, "You know, boy, you're going to have a good time getting this off!" [laughs]....I think when you take time to joke, it shows that you're taking time to do something, other than just checking and saying "See you later." That's why I would joke with somebody. [So that touch is part of the joking?] Yeah. It's like, you know, "Oh look at that. Eeeuuuhhh! Poor you!"

These types of touches were also used by nurses to reinforce the fact that the they were teasing so there would be no misunderstandings. Since in most instances nurses and patients would not know each other very well, these touches served an important purpose:

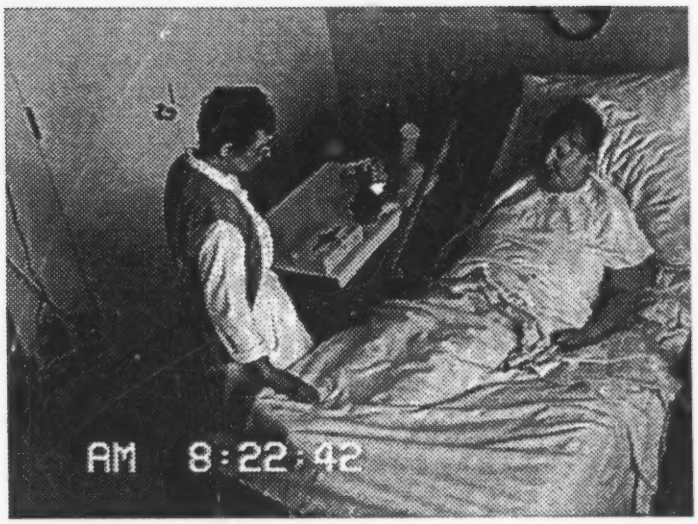


Plate 4. An Example of Orienting Touch

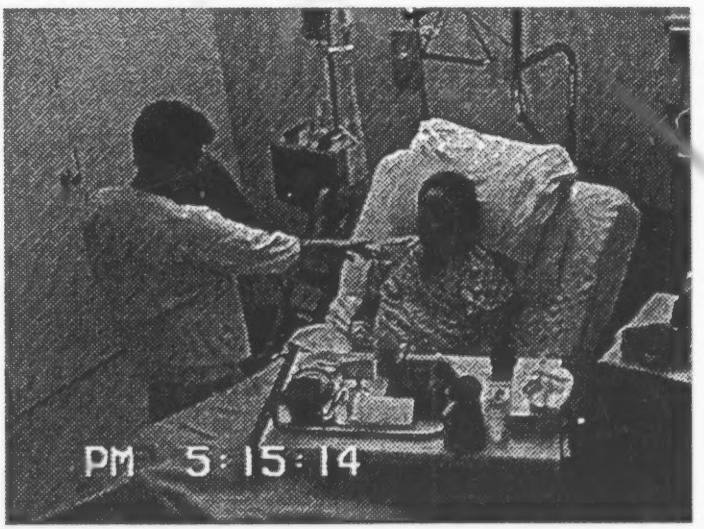


Plate 5. An Example of Social Touch

> When I'm with people I joke, and to make sure they know I'm joking, I always say, "No," right afterwards. My friends will tell me, "Yes, we know you are joking. You don't need to say that." But at work people don't always know....It's [humor] part of my care. And I guess to tell you the truth that when I'm joking I always go like this [gestures a light tap on the researcher's arm].

When patients initiated the tease, nurses appeared to use touches to communicate a light hearted response of acknowledgement and acceptance, a touch that let patients know they knew it was only a joke. For example, one nurse explained a playful tap on the patient's arm as an "Oh, you!...I know you're only joking."

These social touches also appeared to play an important secondary role in terms of enhancing the relationship between nurses and patients. Not unlike the touches that are used in social situations between friends as they tease one another, nurses used these touches to help break down any barriers or reduce tension so that any further interaction could continue on a more equal footing:

> I guess they [the touches] are just to indicate that you're on the same wave length, that you can joke, too. They were just like a joke. So it's just kind of..."We're in this together" or "we're together." Yes, "we agree on something."

Although there were not many examples of social touch in the interactions that were selected for analysis, the following one is typical. In this interaction, the nurse tapes the intravenous line to the patient's arm following his instructions. In a subtle tease, he tells the nurse that he knows how to do many things. The nurse's response is accompanied by laughter and a light tap on the patient's upper arm (see Plate 5):

> Nurse: O.K. There we go—now do you want that taped around so it doesn't dangle?
> Patient: Should be taped good.
> Nurse: [using tape] I'll tape it here first.
> Patient: Want me to hold?
> Nurse: Yup. Just do it here.
> Patient: I'd go right around if I were you cause these ends are going to come loose.
> Nurse: You want it all over?
> Patient: Yes. Go right around it.
> Nurse: O.K.
> Patient: It's only hair.
> Nurse: Only one way to do it.
> Patient: That's right.
> [Nurse continues taping patient's IV attachment.]

Nurse: O.K.?
Patient: I'll teach you how to plaster a wall.
Nurse: Why? Is that your work? Is that . . .
Patient: No, but I've done many of those.
Nurse: Have you?
Patient: Oh yeah. I'm a jack of all trades, master of none. I'm half an electrician, half wall boarder. I can put up ceilings, I can do anything you want.
Nurse: That's very good.
Patient: Plumber.
Nurse: I'd rather have that—brother than a jack of none at all. [laughs and lightly taps patient's upper arm]
Patient: Yeah. [laughs]

Simultaneous Combinations

Nurses sometimes used more than one type of touch at a time. For example, they might hold a patient's hand with one hand while taking a pulse with the other (i.e., a combination of working and comforting touch) or place a hand on the patient's knee or arm as they checked a dressing with the other (i.e., a combination of connecting and working touch). In Plate 6, sequential frames are included to illustrate the way one nurse combined comforting and working touch. In this situation, the patient was quite distressed with shortness of breath and had called the nurse in to raise the head of his bed. Once she had done this, she moved closer to him and put her hand on his. Still holding his hand, she then checked his intravenous site:

Nurse: So how are you? If you're short of breath why don't you put your mask on.
Patient: Yeah. I'm going to. Cause I was, ah, even laying down I was getting short of breath.
Nurse: Yeah. [Patient puts his mask back on. The nurse touches the patient's hand and then with the other hand checks his intravenous site.] Is there anything else I can do for you? [Nurse continues to hold patient's hand.]
Patient: Not really.
Nurse: Did you have any supper at all?
Patient: Oh yeah. [removes mask] That was the main thing, to get my head up. I was laying down.
Nurse: Were you?
Patient: Jane raised it up, and I thought it was good but I just couldn't lay there. I got too much...
Nurse: Yeah. [Nurse lets go of patient's hand and begins to check drainage bottles.] Are you loosing any more?

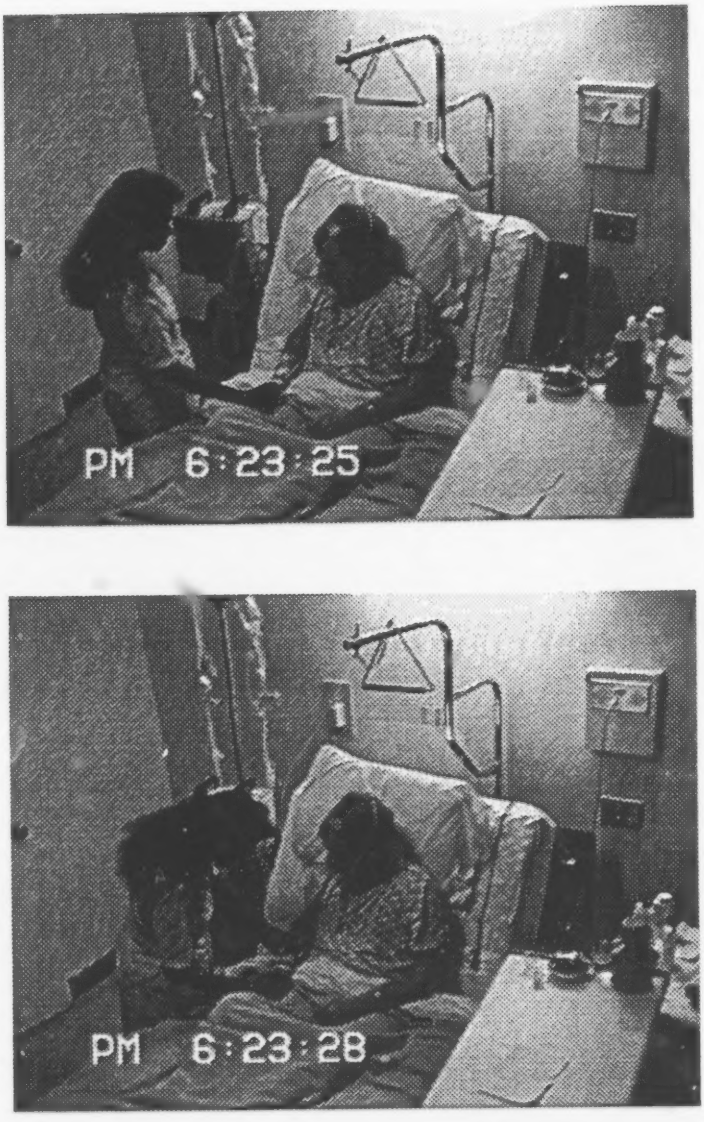


Plate 6. An Example of a Combination of Comforting and Working Touch, Sequential Frames

In this interaction, the nurse was responding to the patient's distress. She spoke slowly and calmly to the patient, remained close to him, and held his hand. However, while she did this, she also checked his intravenous site, a pattern noticed in many interactions where nurses took advantage of the time with patients to do several things at once. In this example, the comforting touch was a response to patient distress and anxiety; however, when there was a possibility that a working touch could create discomfort, a comforting touch was often used in combination with a working touch.

While some combinations of touch could be clearly observed, other types of combinations were more difficult to detect. One nurse indicated that combinations might also occur within one contact and gave the example of a situation in which he might place his whole hand on the patient's abdomen while he assessed a subcutaneous site with his fingers. He explained that by touching the patient with his whole hand he was able to give "a little bit more....It's kind of a reassuring touch with the touch that's necessary."

Types of Touch in Relation to Types of Attending

The average total duration of touch during all types of attending was 15.93 seconds (s.d.= 21.82) in data set #1 and 18.97 seconds (s.d.= 26.01) in data set #2. In relation to the duration of types of attending, the mean relative duration of the total number of touches was .16 seconds (s.d.=.211) and .19 seconds (s.d.=.208), respectively.

There were 10 instances where simultaneous combinations of touch occurred. Working touch was combined five times with orienting touch, three times with connecting touch, and once with comforting touch. The remaining touch was a combination of connecting and orienting touch. Because of the small number of touch combinations, these were not included in the analysis as combinations per se. However, to avoid losing data related to the occurrence of less frequently occurring types of touch, the touch events which included simultaneous touches were recoded using a priority system based on the following hierarchical arrangement of touch types: comforting, connecting, social, orienting, and working touch. In total, only seven social touch events were observed in the interactions

selected for coding. Since these touches were most similar to connecting touches, they were combined with these touches for the remainder of the analysis.

The mean total duration of touch and mean relative duration of touch in seconds for types of touch and types of attending are shown in Table 10. Frequencies represent the number of units of attending in which at least one touch behaviour occurred. Not all units of attending in the nurse-patient interactions included the same variety of touches. This is most clearly demonstrated for the attending type *doing tasks*. Of 19 units of *doing tasks* in data set #1, all but one included exclusively working touches. A similar pattern is also evident in data set #2. In contrast, when units of attending were classified as *doing more*, there was a greater likelihood that these units included a variety of touches.

There are some differences between the two data sets. The mean time spent touching in units of attending classified as *doing more* was longer in data set #1 than data set #2. The total durations of comforting and working touches in data set #1 on average were longer than in data set #2. In part, this may be explained by the relatively small sample of units classified as *doing more* in data set #2, although the proportion of units of *doing more* that included comforting and working touch is slightly higher for data set #2. Another difference between the data sets is evident in the overall duration of touch when the unit of attending has been classified as *doing tasks*. The differences here can be largely attributed to longer durations of working touch in data set #2. Differences also exist between the two samples in relation to units of attending classified as *doing for* and *doing with*, but these are relatively small by comparison. In both data sets, standard deviations are large, suggesting that the scores range widely.

Table 10

Mean Durations (MD) and Relative Durations (RD) of Total Time Spent Touching in Seconds

Type of Attending	Type of Touch														
	Comforting			Connecting			Working			Orienting			All types		
	f* P**	MD [s.d.]	RD† [s.d.]	f P	MD [s.d.]	RD [s.d.]	f P	MD [s.d.]	RD [s.d.]	f P	MD [s.d.]	RD [s.d.]	f	MD [s.d.]	RD [s.d.]
DOING MORE:															
Data Set #1 (n=17)	8 .47	17.38 [17.16]	.29 [.32]	10 .59	7.20 [9.60]	.19 [.32]	9 .52	22.78 [23.75]	.24 [.31]	1 .06	1.00 [.00]	.02 [.00]	28	13.61 [17.58]	.21 [.29]
Data Set #2 (n=7)	4 .57	10.75 [14.98]	.11 [.10]	5 .71	6.60 [10.31]	.08 [.13]	5 .71	4.2 [3.77]	.04 [.03]	1 .14	1.00 [.00]	.01 [.00]	15	6.50 [9.25]	.07 [.09]
DOING FOR:															
Data Set #1 (n=15)	1 .07	3.00 [.00]	.01 [.00]	3 .20	6.00 [6.08]	.05 [.06]	11 .74	41.63 [38.50]	.22 [.19]	1 .07	1.00 [.00]	.01 [.00]	16	30.00 [36.23]	.16 [.18]
Data Set #2 (n=14)	1 .07	2.00 [.00]	.01 [.00]	2 .14	3.50 [3.54]	.02 [.01]	13 .93	30.08 [32.15]	.28 [.17]	1 .07	3.00 [.00]	.02 [.00]	17	23.70 [30.27]	.22 [.19]
DOING WITH:															
Data Set #1 (n=27)	0 -	- -	- -	6 .22	6.83 [12.88]	.10 [.22]	24 .89	17.17 [21.59]	.12 [.13]	4 .15	3.00 [2.45]	.02 [.01]	34	13.31 [19.36]	.10 [.14]
Data Set #2 (n=63)	3 .05	3.67 [2.08]	.03 [.03]	5 .10	1.0 [.00]	.01 [.01]	61 .97	19.33 [25.16]	.19 [.18]	7 .11	3.29 [2.06]	.05 [.08]	76	14.91 [22.77]	.15 [.17]
DOING TASKS:															
Data Set #1 (n=19)	0 -	- -	- -	1 .05	2.0 [.00]	.01 [.00]	19 1.00	13.42 [11.77]	.16 [.17]	0 -	- -	- -	20	12.85 [11.74]	.16 [.17]
Data Set #2 (n=27)	0 -	- -	- -	2 .07	1.5 [.71]	.04 [.04]	27 1.00	37.85 [30.92]	.37 [.27]	1 .04	1.0 [.00]	.01 [.00]	30	34.20 [31.32]	.33 [.28]

* Number of interactions in data set which include one or more touch events of this type.

**Proportion of interactions in data set which include this type of touch.

† Relative Duration = total duration of touch in a unit of attending/total time of unit of attending.

In relation to the type of touch, comforting touches occurred most often and with the longest total durations within the context of *doing more*. The fact that NPIs classified as *doing tasks* did not include comforting touches was expected, because the definition of *doing tasks* precludes the use of this type of touch. Connecting touches appeared in all types of attending, although they were most commonly associated with *doing more* and appeared very rarely in the context of *doing tasks*. While mean durations and relative durations varied between the groups, on average, more time was spent giving connecting touches during a *doing more* type of attending than any other type of attending.

As might be expected, the total amount of time spent in using working touch within a unit of attending was on average longer than other types of touch. Orienting touches were most often associated with *doing with* types of attending. In comparison to other touches, relatively little time was spent using this type of touch.

A chi-square was completed to determine the relationship between types of touch and types of attending. Because a high proportion of the cells had expected frequencies of less than five, types of touch were collapsed into two types —social-emotional touch (a combination of comforting and connecting touch) and instrumental touch (a combination of working and orienting touch) in both data sets (see Table 11). The chi-squares were significant for both data sets (data set #1 chi-square=24.47, df=3, p=.0000; data set #2 chi-square=25.35, df=3, p=.0000). Patterns of touch are very similar for the two data sets. In the *doing more* type of attending, the use of social-emotional touch exceeded expected values, while the opposite occurred in *doing with* and *doing tasks* types of attending. The use of working touch was less than the expected value in *doing more* types of attending and exceeded this value in *doing tasks* types of attending.

Table 11

Type of Attending and Type of Touch

	Type of Touch			
	Social/Emotional Touch		Instrumental Touch	
	Data Set #1	Data Set #2	Data Set #1	Data Set #2
Type of Attending	n (Row %)	n (Row %)	n (Row %)	n (Row %)
Doing More	18 (64.3)	9 (60.0)	10 (35.7)	6 (40.0)
Doing For	4 (25.0)	3 (17.6)	12 (75.0)	14 (82.4)
Doing With	6 (17.6)	8 (10.5)	28 (82.4)	68 (89.5)
Doing Tasks	1 (5.0)	2 (6.7)	19 (95.0)	28 (93.3)
Column Totals	*29*	*22*	*69*	*116*

In summary, the descriptive and chi-square results show that the use of different types of touch varies depending on the type of nurse attending and that the data sets represent similar patterns of touch with respect to types of attending. The relative proportions of types of touch and types of attending are likely to be more accurately reflected in the second data set.

Description of Touch Events (Quantitative)

All touch events in the two data sets were combined and analyzed to describe the touch behaviours. Using the two data sets, a total of 1711 touch events were included. The majority of the touch events were classified as working touch (92%), followed by connecting touch (4%), comforting touch (3.5%), and orienting touch (2%).

By far, the majority of the touches were initiated by nurses (92.1%). In the total sample, there were only six touches initiated by patients: three working touches, two orienting touches, and one connecting touch. The remaining touches were classified as being mutually initiated (7.5%) or were a combination of mutually initiated and nurse-initiated touches (3.4%). When touch type was considered, the pattern remains much the

same, with few exceptions. All of the comforting touches were nurse initiated. In addition, mutually initiated touch only occurred when the touches were of the working (probability = .077) or connecting type (probability = .064).

The parts of the body used to touch were grouped into fingers, hands, arms, and trunk. Nurses used their fingers (60.4%) and hands (31.6%) to make contact with patients most of the time. Physcial contact involving arms (6.4%) and trunk (1.6%) were rare. The pattern varied somewhat from this for each type of touch as shown on Table 12.

Table 12

Parts of the Body Used to Touch

	Types of Touch															
	Comfort				Connecting				Working				Orienting			
	F	H	A	T*	F	H	A	T	F	H	A	T	F	H	A	T
Frequency	66	56	-	-	72	56	9	7	1786	900	196	45	32	10	1	-
Proportion	.54	.46	-	-	.50	.39	.06	.05	.61	.31	.07	.02	.74	.23	.02	-

* F= fingers, H = hand, A = arm, T = trunk

When the touch was of the comforting type, both fingers and hand were used most of the time. Examples of comforting touch in which nurses held a patient's hand or stroked his/her arm clearly demonstrated the use of both fingers and palmer surface of the hand in these types of contact. In connecting touch, nurses also used their fingers and, to a less extent, their hands. This can be explained by the fact that two types of connecting touches were identified. One involved light taps using the palmer surface of the nurse's fingers (e.g., on the patient's arm), and the other involved a stationary contact of the palmer surface of nurse's fingers and hand (e.g., on the patient's knee). In using orienting touches, nurses most often used their fingertips as they pointed to particular areas of the

patient's body. When nurses were using orienting touch to focus on a limb, they were likely to touch the patient using both their fingers and hand, often using rapid light strikes (i.e., tapping).

The locations of all touch events were tabulated as shown in Table 13. It should be noted that more than one location could have been used for any one touch event. When all types of touch were considered, it was found that at one time or another all categories of location were used to describe the location of touch. Nurses were most likely to touch the patient's upper trunk (probability = .290) and forearm (probability = .118) and least like to touch the patient's face (probability = .007). The pattern, however, changes with touch type. Comforting touches were most likely to be located on the forearm (probability = .253), the upper arm (probability = .172), and the hand (probability = .161). Whereas, connecting touches were most likely to be located on the knee (probability = .319) or the patient's upper arm (probability = .143).

Table 13

Location of Touch and Touch Type

	Location of Touch															
Touch Type	Face	Head	Neck	Finger	Hand	Fore-arm	Elbow	Upper arm	Shou-lder	Upper trunk	Lower trunk	Thigh	Knee	Lower leg	Foot	Total
COMFORTING																
Frequency	-	-	-	8	14	22	-	15	7	6	-	11	2	-	2	87
Probability (row)	-	-	-	.092	.161	.253	-	.172	.080	.069	-	.126	.023	-	.023	
CONNECTING																
Frequency	-	-	-	7	9	3	-	13	6	7	-	5	29	8	4	91
Probability (row)	-	-	-	.077	.099	.033	-	.143	.066	.077	-	.055	.319	.088	.044	
WORKING																
Frequency	17	28	25	209	144	243	30	148	93	642	168	143	28	75	67	2060
Probability (row)	.008	.014	.012	.101	.070	.118	.015	.072	.045	.312	.082	.070	.014	.036	.033	
ORIENTING																
Frequency	-	-	-	-	2	3	-	2	-	9	6	4	1	3	4	34
Probability (row)	-	-	-	-	.059	.088	-	.059	-	.265	.176	.118	.029	.088	.117	
ALL TYPES																
Frequency	17	28	25	224	169	271	30	178	106	664	174	163	60	86	77	2292
Probability (row)	.007	.012	.011	.098	.074	.118	.013	.078	.046	.290	.075	.071	.026	.038	.034	

The form of the touch used by nurses was described by using six forms: non-move, palpate, rub, hold, strike, and wrap. As shown in Table 14, the most common form of touch used by nurses was the rub (probability = .407), followed by non-moving (probability =.267). The forms characteristic of working touch also followed this pattern. However, for comforting touch, the forms that were most likely to be used were non-moving (probability = .377), rubbing (probability = .300), and holding (probability = .101). The forms most common to connecting touches were non-move and strike, with probabilities of .443 and .266, respectively. Orienting touches characteristically took the form of light strike (probability = .455) and rubbing (probability = .273).

Table 14

Form of Touch and Touch Type

Forms of Touch	Types of Touch									
	Comfort		Connecting		Working		Orienting		All types	
	n	Prob*	n	Prob	n	Prob	n	Prob	n	Prob
Non-move	26	.377	35	.443	454	.255	4	.121	519	.267
Palpate	-	-	-	-	44	.025	1	.030	45	.023
Rub	20	.300	14	.177	748	.420	9	.273	791	.407
Hold	16	.232	9	.114	281	.158	4	.121	290	.149
Strike	7	.101	21	.265	217	.122	15	.455	260	.134
Wrap	-	-	-	-	37	.021	-	-	37	.019

* Column probability

The average duration of touch events was 2.49 seconds. However, as indicated by the standard deviation of 3.63, there was considerable variability in the length of touches. The

average duration of comfort touches was the longest (mean = 3.00, standard deviation = 3.63), followed by working touch (mean = 2.50, standard deviation = 3.73) and connecting touch (mean = 2.32, standard deviation = 2.59). Orienting touches were the shortest, with an average duration of 1.35 seconds (standard deviation = .80). Using a one-way analysis of variance, no significant relationship between touch type and duration was identified.

Concurrent Patterns of Behaviour Associated with Touch

Behaviours that coincide with each touch type were analyzed to identify consistent patterns. The probability of concurrent patterns occurring in the context of the different types of attending was also considered. Using the two data sets, a total of 1711 touch events were included. A break down of the touch events according to touch type and in relation to type of attending is shown in Table 15.

It is clear that the majority of observed touch events were classified as working touches and that the other three types occurred far less frequently. Orienting touch had the lowest probability (.018). When the context of the interaction in which the touch events occurred is considered, the probability of touch is highest for *doing with* units of attending, followed by *doing for*, *doing tasks*, and *doing more*.

Comforting and connecting touch were most likely to occur within the context of *doing more*. In contrast, working and orienting touch were most likely to occur within the context of *doing with*. Within each type of attending, working touch had the highest probability of occurring. However, the pattern of touch in the *doing more* units of attending was different from the other types of attending in that a greater variety of touch was more likely to be represented.

A chi square completed to determine the relationship between types of touch and types of attending was significant (chi-square= 590.17, df=9, p=.000).

Table 15

Types of Touch in the Combined Sample and the Context in Which They Occur

Type of Attending	Types of Touch				
	Comforting	Connecting	Working	Orienting	All Types
DOING MORE					
Frequency	57	41	88	2	188
Column Probability	.864	.526	.057	.064	.110
Row Probability	.303	.218	.468	.011	
DOING FOR					
Frequency	4	17	319	3	343
Column Probability	.061	.218	.208	.097	.200
Row Probability	.012	.050	.930	.009	
DOING WITH					
Frequency	5	15	711	25	756
Column Probability	.076	.192	.463	.806	.442
Row Probability	.007	.020	.940	.033	
DOING TASKS					
Frequency	0	5	418	1	424
Column Probability	-	.064	.272	.032	.248
Row Probability	-	.012	.986	.002	
ALL TYPES					
Frequency	66	78	1536	31	1711
Row Probability	.039	.046	.898	.018	

Eye Gaze

Nurses' concurrent patterns of eye gaze during touch events were tabulated in relation to type of touch and type of attending (see Table 15). Extended eye gaze was defined by a minimum of 5 seconds of directed eye gaze toward the patient. Brief (i.e., less than five seconds) or no eye gaze made up the alternate category. The conditional probability for extended eye gaze given concurrent touch was .038. This indicated that few touches occurred concurrently with direct extended eye gaze. This does not mean, however, that these were the only touches that occurred in conjunction with eye gaze. It is possible that touches occurred in conjunction with eye gaze that was less than 5 seconds; however, data are not available on this.

The probability was .35 that the concurrent touch associated with extended eye gaze would be a comforting touch, and when this comforting touch occurred in the context of *doing more*, the conditional probability increased to .407. In comparison, the conditional probability for extended eye gaze given a connecting touch was .244, and when this occurred in the context of *doing more*, it increased to .366. The conditional probability for prolonged eye gaze during a working touch or a connecting touch were both low, and differences related to type of attending were negligible. It is interesting to note that prolonged eye gaze did not occur in conjunction with any kind of touch in the context of *doing tasks*.

Table 16

Concurrent Eye Gaze Behaviors with Type of Touch and Type of Attending

	Types of Touch														
	Comforting			Connecting			Working			Orienting			All Types		
Types of Attending	n	SE*	NE**	n	SE	NE	n	SE	NE	n	SE	NE	n	SE	NE
Doing More															
Frequency	54	22	32	41	15	26	87	3	84	2	1	1	184	41	143
Probability (row)		[.407]	[.593]		[.366]	[.634]		[.034]	[.966]		[.500]	[.500]		[.223]	[.777]
Doing For															
Frequency	4	-	4	17	1	16	319	1	318	3	-	3	343	2	341
Probability (row)		-	[1.00]		[.059]	[.941]		[.003]	[.997]		-	[1.00]		[.006]	[.994]
Doing With															
Frequency	5	1	4	15	3	12	710	15	695	25	2	23	755	21	734
Probability (row)		[.200]	[.800]		[.200]	[.800]		[.021]	[.979]		[.080]	[.903]		[.029]	[.972]
Doing Tasks															
Frequency	-	-	-	5	-	5	418	-	418	1	-	1	424	-	424
Probability (row)		-	-		-	[1.00]		-	[1.00]		-	[1.00]		-	[1.00]
All Types															
Frequency	63	23	40	78	19	59	1534	19	1515	31	3	28	1706	64	1642
Probability (row)		[.365]	[.635]		[.244]	[.756]		[.012]	[.988]		[.097]	[.903]		[.038]	[.962]

* SE = sustained eye gaze (5 seconds or more)
**NE = brief (less than 5 seconds) or no eye gaze

Proximity

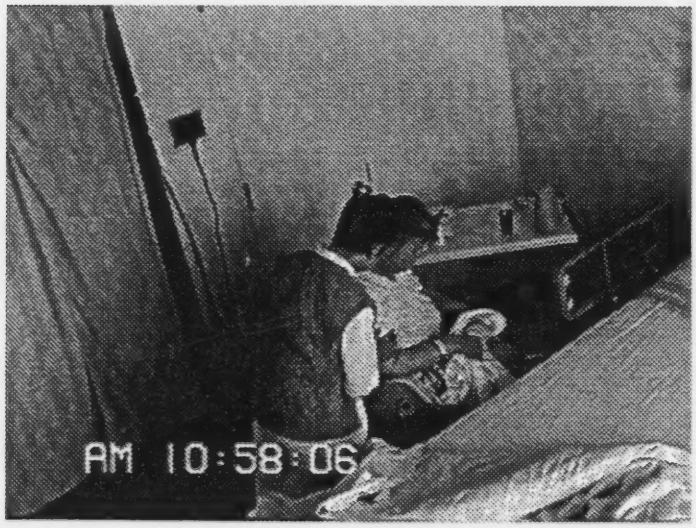
Concurrent behaviours related to proximity between the patient and the nurse during touch events were also considered. The conditional probability for touch occurring concurrently with proximities within the intimate-close, intimate-not close, personal, and social/public zone were .057, .876, .067, and .00, respectively (see Appendix C for definitions of each type of proximity). In the social/public zone, touches were not possible because of the distance between the nurse and patient. Examples of touch in each of the different proximities are illustrated in Plates 7 to 9. Conditional probabilities of the different types of touch with each proximity are also included. The type of touch with the highest probability given an intimate-close proximity was working touch, with a conditional probability of .827. Touch given an initimate-close proximity was most likely to occur concurrently with a *doing for* type of attending (probability = .684). The third picture in Plate 8 illustrates a nurse providing assistance in helping a patient move from a chair to a commode as an example of working touch within the intimate-close proximity. When nurses assist patients with movement such as transfers or with walking, it is not uncommon for them to position themselves very close to the patient and provide support by putting their arms around the patient.

When a touch occurred in the intimate-close zone, the probability of it being a comforting touch was .122. These types of comforting touches were most likely to occur in the context of *doing more* (conditional probability = .833). An example of comforting touch occurring within the intimate-close zone is shown in Plate 7. In this situation, the nurse sat on the patient's bed and stroked the patient's arm. Orienting touches did not occur when the nurse was in the intimate-close zone, and connecting touches occurred in this zone only very rarely (probability =.051).

Plate 7. Examples of Comforting, Connecting, and Working Touch, Intimate-Close Proximity (n=98)

1. Comforting Touch (Conditional Probability = .122)

2. Connecting Touch (Conditional Probability = .051)



3. Working Touch (Conditional Probability = .827)

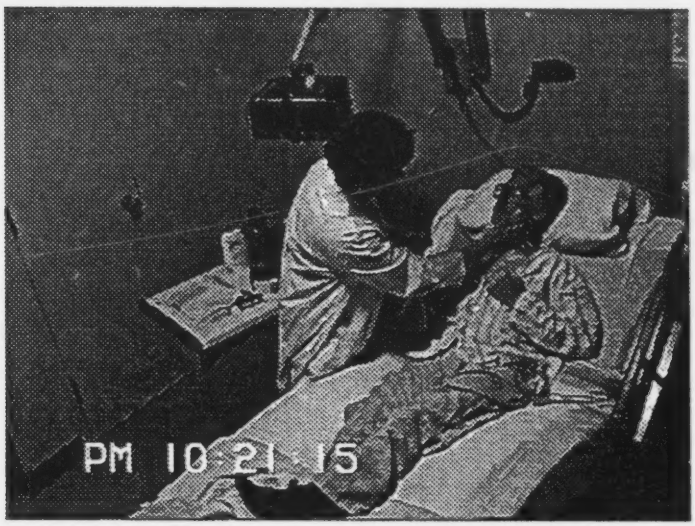
4. Orienting Touch (Conditional Probability = .00)

Plate 8. Examples of Comforting, Connecting, Working, and Orienting Touch, Intimate-Not close Proximity (n=1496)

1. Comforting Touch (Conditional Probability = .033)

2. Connecting Touch (Conditional Probability = .033)

3. Working Touch (Conditional Probability = .918)



4. Orienting Touch (Conditional Probability = .017)

Plate 9. Examples of Comforting, Connecting, Working, and Orienting Touch, Personal Proximity (n=144)

1. Comforting Touch (Conditional Probability = .035)

2. Connecting Touch (Conditional Probability = .193)

3. Working Touch (Conditional Probability = .719)

4. Orienting Touch (Conditional Probability = .004)

The probability of touch occurring concurrently with a proximity of intimate-not close was by far the largest at .876. This is not surprising considering that it is within this zone that most nursing care would be given. Therefore, as expected, the probability of a touch given in the intimate-not close zone being a working touch was .918. When concurrent context was also considered, the type of attending with highest probability of including a working touch given an intimate-not close zone was .441 for *doing with*, followed by a probability of .275 for *doing tasks*, a probability of .147 for *doing for*, and a probability of .053 for *doing more*. An example of working touch as well as less probable types of touch occurring concurrently with this type of proximity are shown in Plate 8.

The probability that touches occurred concurrently with proximity in the personal zone was .719 for working touch, .193 for connecting touch, .035 for orienting touch, and .053 for comforting touch. Examples of each are shown in Plate 9. Working touch given in a personal zone was least likely to occur in a context of *doing more* (probability = .049) and *doing tasks* (probability = .049) and equally likely to occur in a context of *doing for* (probability = .427) and *doing with* (probability = .476).

Nurse-Patient Dialogue

The type of dialogue that nurses and patients engaged in during touch events was tabulated and is presented in Table 17. Five types of dialogue were observed: silence, emotional support, care talk, talk to self, and social talk. Since there were only two incidences of touch occurring concurrently with talking to self, these events were dropped from the analysis. Care talk and silence were most likely to occur concurrently with touch, with probabilities of .509 and .367, respectively. The probability of social talk occurring with touch was .101, and the probability of emotional support occurring concurrently with touch was .023.

When patterns of nurse-patient dialogue in relation to each type of touch are considered, it is clear that care talk has the highest probability of occurring concurrently within each type of touch. The probability of touch occurring with silence is highest for working touch

(probability =.396) and did not occur at all with orienting touch. Although emotional support has the highest probability of occurring concurrently with comforting touch, it could occur with connecting and working touches; but admittedly, the probabilities are low at .013 and .016, respectively. Social talk was most likely to occur with connecting touch (probability .20). The only type of dialogue to occur concurrently with orienting touch was care talk.

When the context is considered, the pattern of conditional probabilities of each type of dialogue with all types of touch is most similar in *doing for* and *doing with* types of attending. Care talk had the highest probability, followed by silence; and finally, the lowest probabilities were associated with social talk and emotional support. The pattern for touches occurring in *doing more* types of attending departed from this in that the probability for silence was lower than in the previous types of attending and that emotional support and social talk were equally likely to occur concurrently with touch (although the probabilities were small). Lastly, in units of attending categorized as *doing tasks*, touches were most likely to occur concurrently with silence (probability = .807), followed by care talk (probability = .190). Emotional support did not ever occur with any touch in this type of attending, and social talk only occurred once (probability = .003).

Table 17

Concurrent Dialogue with Type of Touch and Type of Attending

Types of Attending	Types of Touch																								
	Comforting					Connecting					Working					Orienting					All Types				
	n	1	2	3	5*	n	1	2	3	5	n	1	2	3	5	n	1	2	3	5	n	1	2	3	5
Doing More																									
Frequency	55	14	10	30	1	39	2	1	35	1	85	10	6	53	16	2	-	-	2	-	181	26	17	120	18
Probability**		.255	.182	.545	.018		.051	.026	.897	.026		.118	.071	.624	.188		-	-	1.00	-		.144	.094	.663	.099
Doing For																									
Frequency	2	-	-	2	-	17	-	-	7	10	308	85	9	157	54	3	-	-	3	-	327	85	9	169	64
Probability		-	-	1.00	-		-	-	.412	.588		.276	.029	.510	.175		-	-	1.00	-		.260	.028	.517	.196
Doing With																									
Frequency	5	1	2	2	-	15	1	-	10	4	682	165	9	430	78	25	-	-	25	-	727	167	11	467	82
Probability		.200	.400	.400	-		.067	-	.667	.267		.242	.013	.630	.114		-	-	1.00	-		.229	.015	.642	.113
Doing Tasks																									
Frequency	-	-	-	-	-	4	1	-	3	-	394	321	-	72	1	1	-	-	1	-	399	322	-	76	1
Probability	-	-	-	-	-		.250	-	.750	-		.815	-	.183	.003		-	-	1.00	-		.807	-	.190	.003
All Types																									
Frequency	62	15	12	34	1	75	4	1	55	15	1466	581	24	712	149	31	-	-	31	-	1634	600	37	832	165
Probability		.241	.193	.548	.016		.053	.013	.733	.200		.396	.016	.486	.102		-	-	1.00	-		.367	.023	.509	.101

* 1= silence, 2= emotional support, 3= care talk, 5= social talk

** Row probability

Verbal Communication Accompanying the Touch

In addition to observing the kind of nurse-patient dialogue in which touch events were embedded, observers also noted whether the nurse was talking at the moment the touch was given and if her statements were related or unrelated to the touch event. The pattern of verbal communication by nurses as they were used with touching is shown in Table 18. Nurses were silent as they touched most patients (probability = .605). The probability that touch was accompanied by related communication was .251. This pattern is closely replicated if the touch is a working touch. However, it was different if the nurse used other types of touch. When using comforting, connecting, and orienting touch, nurses were most likely to accompany the touch with related verbal communication. Probabilities were .508, .410, and .934, respectively. When type of attending is considered, touches that occurred in the context of *doing tasks* were least likely to be accompanied by related communication by the nurse (probability = .107).

Table 18

Nurses' Verbal Communication Accompanying Touch

Type of Attending	Types of Touch: Comforting				Connecting				Working				Orienting				All Types			
	n	1	2	3*	n	1	2	3	n	1	2	3	n	1	2	3	n	1	2	3
Doing More																				
Frequency	56	21	26	9	41	8	16	17	88	54	19	15	2	-	2	-	187	83	63	41
Probability (R)†																		.443	.337	.220
Probability (C)°																		.082	.150	.169
Doing For																				
Frequency	2	-	2	-	17	2	7	8	317	174	75	68	3	-	3	-	339	176	87	76
Probability (R)																		.519	.257	.224
Probability (C)																		.174	.208	.314
Doing With																				
Frequency	5	1	4	-	15	3	6	6	684	386	192	106	24	2	22	-	728	392	224	112
Probability (R)																		.538	.308	.154
Probability (C)																		.388	.535	.463
Doing Tasks																				
Frequency	-	-	-	-	5	2	3	-	412	348	41	13	1	-	1	-	418	360	45	13
Probability (R)																		.861	.108	.031
Probability (C)																		.356	.107	.054
All Types																				
Frequency	63	22	32	9	78	15	32	31	1501	972	327	202	30	2	28	-	1672	1011	419	242
Probability (R)		.350	.508	.143		.192	.410	.397		.648	.218	.135		.067	.934	-		.605	.251	.145

* 1= silence, 2 = verbal statement(s) related to touch or one of two simultaneous touches, 3 = verbal statement(s) unrelated to touch

† Row probability

• Column probability

Nurse Activity

Although nurse activity during touch events was recorded, because several activities occurred very rarely with touch events, the following activities were deleted from the analysis: adjustment of patient's environment (15 touches, of which 13 were working touches), non-pharmacological symptom management (15 touches, of which 13 were working touches), entering (no touches), departing (3 touches, all of which were connecting touches), and visiting (11 touches, of which 10 were connecting touch). The category of other nursing activities (which was frequently used when nurses were involved in more than one activity at the same time) was also deleted from this analysis. This category was found to be associated with 110 touch events. Touch events that occurred concurrently with the remaining categories of nurse activity are shown in Table [illegible]. Since the reliability of this measure is in question (based on results of the second interobserver check), the results of this analysis must be interpreted with caution.

Touch was most likely to occur concurrently with activities related to care of intravenous or sub-cutaneous sites (probability = .313) and skin care (probability= .268). These findings need to be interpreted in light of the fact that all but one of the patients in this study had an intravenous and/or were receiving medication subcutaneously and that all patients would have required some forms of skin care. Probabilities of touch occurring concurrently with the remaining four activities were fairly consistent, ranging from .125 to .092. This pattern is also reflected when the touch is a working touch.

When a touch other than working touch is considered, the pattern of nurse activity associated with touch changes. The nurse activity that has the highest probability of occurring concurrently with comforting touch is the activity of checking (probability = .500). However, connecting touch occurs with almost equal probability with three different activities: checking (probability = .283), assisting with dressing and grooming (probability = .283), and caring for intravenous/subcutaneous sites (probability = .245). While it was most likely that orienting touch occurred with care of intravenous/subcutaneous sites (probability=

.400), this type of touch was also associated with checking (probability = .267) and assisting with dressing/grooming (probability = .200).

Table 19

Nurse Activity and Touch Type

	Nurse Activity					
Touch Type	Checking	Medications	IV/SC	Skin Care	Dress/Groom	Movement
COMFORTING						
Frequency	29	12	3	10	2	2
Probability (Row)	.50	.207	.052	.172	.034	.034
CONNECTING						
Frequency	15	3	13	-	15	7
Probability (row)	.283	.057	.245	-	.283	.132
WORKING						
Frequency	143	132	459	401	145	134
Probability	.101	.093	.324	.283	.102	.095
ORIENTING						
Frequency	8	3	12	6	1	-
Probability (Row)	.267	.100	.40	.20	.033	-
ALL TYPES						
Frequency	195	150	487	417	163	143
Probability	.125	.097	.313	.268	.105	.092

The pattern of concurrent nurse activities and touch varies with type of attending. When touch occurs in the context of *doing more,* it was most likely to be associated with checking (probability = .283), care of skin (probability = .258), and giving medications (probability = .208). However, when touch occurred in the context of *doing with,* nurses were most likely to be involved in caring for intravenous/subcutaneous sites (probability = .493). In the context of *doing for,* the type of activities the nurse could be involved in were restricted by the definition of this type of attending. Therefore, as expected, touch occurs concurrently with assisting with dressing and grooming (probability = .388), assisting with movement

(probability = .337), and skin care (probability = .275). In the last type of attending, *doing tasks*, most of the time, nurses' use of touch occurred while being involved in skin care (probability = .441) and caring for intravenous/subcutaneous sites (probability = .317).

Patient Condition

Touch events were analyzed in relation to three categories describing patient state: uncomfortable, comfortable-eyes open, and comfortable-eyes closed (see Table 20). When all types of touch are considered in relation to all types of attending, the probability of touch events occurring concurrently with a comfortable, awake patient was the highest (probability = .626), followed by an uncomfortable patient state (probability = .315). This pattern was consistent for all touch types, except for comforting touch. If the touch was comforting, it was most likely to occur concurrently with an uncomfortable patient state (probability = .833). When the context in which touch took place was considered, the same pattern of touch occurring concurrently with a comfortable-awake patient state was evident, although in units of attending classified as *doing more* and *doing with* the probability that touch occurred concurrently with an uncomfortable patient state was higher than in the other units of attending (probabilities = .436 and .410, respectively).

Others in the Room

When visitors were present in the patient's room, the proportion of comforting, connecting, and orienting touches used by nurses was less than when the nurse and patient were alone. If other staff members or visitors and other nurses were present, the proportion of connecting touches increased from 0.51 (when nurse and patient alone) to .326.

Table 20

Patient Condition, Touch Type and Type of Attending

Types of Attending	Types of Touch																			
	Comforting				Connecting				Working				Orienting				All Types			
	n	1	2	3*	n	1	2	3	n	1	2	3	n	1	2	3	n	1	2	3
Doing More																				
Frequency		50	2	5		6	35	-		25	62	1		1	1	-	188	82	100	6
Probability (row)																		.436	.532	.032
Doing For																				
Frequency		-	4	-		6	11	-		48	271	-		-	3	-	343	54	289	-
Probability (row)																		.157	.843	-
Doing With																				
Frequency		5	-	-		3	12	-		292	416	3		10	15	-	756	310	443	3
Probability (row)																		.410	.586	.004
Doing Tasks																				
Frequency		-	-	-		2	3	-		91	236	91		-	1	-	424	93	240	91
Probability (row)																		.219	.566	.215
All Types																				
Frequency	66	55	6	5	78	17	61	-	1536	456	985	95	31	11	20	-	1711	539	1072	100
Probability (row)		.833	.090	.076		.218	.782	-		.300	.614	.062		.355	.626	-		.315	.626	.058

* 1= patient uncomfortable; 2 = patient comfortable, eyes open; 3 = patient comfortable, eyes closed

Summary

Qualitative and quantitative descriptions of four types of attending, five types of touch, and patterns of behaviour associated with touch events have been presented. Although the characteristics of the physical contact in nurse-patient touches varied according to the type of touch used, it was clear that the meaning of this contact could not be interpreted in isolation from other verbal and and nonverbal behaviours that accompanied the contact. Patterns of behaviour associated with each type of touch have been described and variations in these patterns identified in relation to the type of attending in which they were embedded. The significance of these findings is discussed in Chapter IV.

V. DISCUSSION

The purpose of this study was to explore and describe the behaviours of nurses and patients during interactions that involved touch events in order to develop a method for describing the complex nature of touch and a reliable and valid instrument to study nurse-patient touch. An ethological approach was taken because an analysis of the existing research on touch revealed unsubstantiated assumptions about the nature of nurse-patient touch, methodological problems, and significant gaps, the most notable being a lack of attention to the complexity and organization of behavioral patterns associated with touch. The main contribution of this study is the development of a reliable and valid observational method which facilitates the study of nurse-patient touch in a more detailed and comprehensive way than previous attempts. Four patterns of behaviour, referred to as types of attending, identified in this study were considered to be the structural units of nurse-patient interaction. These patterns of interaction differed along lines of nurse-patient proximity, the degree to which the nurse focused on the patient and/or caretaking tasks, and the ways patients participated in the interaction. The use of the types of touch identified in this study were shown to vary depending on the type of attending used by nurses. Further, the findings are suggestive of: 1) the importance of context in studying nurse-patient touch and 2) patterns of touch.

The purpose of this chapter is to discuss the findings of this study in relation to existing work on touch and issues related to observational research. The discussion is presented within the following structure: 1) discussion of research methods; 2) discussion of findings; 3) implications (nursing and research); and 4) summary.

Discussion of Research Methods

Methods

Ethology includes a set of techniques that facilitate the systematic observation and analysis of behaviour under natural conditions without the confines of pre-existing theory; therefore, this approach was consistent with the purpose of this study. The value of the

initial inductive phase was that it offered a way to identify and describe significant behaviours in touch interactions. This was the major strength of the method as participants could not have been expected to be aware all of their behaviours or report them in sufficient detail to meet the needs of this study, and validity would have been threatened by relying on arbitrarily selected variables or the literature to determine the focus of the study. The deductive phase afforded considerable design flexibility; consequently, it was possible to develop a data collection and sampling strategy that facilitated description of the behaviours of interest. A limitation of ethology is the lack of attention to and guidance in dealing effectively with other sources of data (e.g., interview data) when this is available. If researchers were confined to only observational methods, potentially valuable insight into the perceptions of participants regarding the meaning of behaviours might be ignored. It is not inconceivable to combine data obtained from all sources in order to validate an ethogram and expand descriptions, as was done in this study.

Techniques of Data Collection

Videotaping

Naturalistic observation was the major data collection technique in this study. It proved to be an appropriate and rich source of data. Videotaping observations made it possible to preserve the observational context, verbal content, nonverbal behaviours, and interactive processes for analysis and coding. Of particular advantage was the ability to repeatedly review videotapes, both in real time and in slow motion. This facilitated the study of a wide range of simultaneous behaviours, including rarely occurring events and subtle or rapid changes in behaviour. Often, the only way some rapidly occurring behaviours (e.g., some forms of touch or eye gaze) could be described accurately was to view the videotape using frame by frame advance. The most difficult aspects of using videotaped data was dealing with the wealth of data in terms of keeping focused on the behaviours that were important in this study (e.g., there were equally interesting interactions that did not involve touch events) and keeping the specific behaviours to be

studied to a manageable number. The advantage of capturing this amount of data is that the tapes can be used for secondary analysis in subsequent studies.

The interviews with patients and nurses

The use of unstructured, open-ended, interactive interviews made it possible to elicit patient and nurse perceptions of nurse-patient touch, which could be used to validate observations and expand descriptions, as also demonstrated by Pepler (1991). One of the most useful techniques was the use of short video segments during the interviews as they frequently stimulated invaluable comments. Generally, patients were unable to recall or describe specific experiences of positive or negative touch. Yet when they watched short segments of the videotapes that included touch events, they could often remember those interactions and how they felt at the time and could comment on their interpretation of and response to the touch. For those interactions they could not remember specifically, patients could still provide brief comments on what they thought the nurse's intentions might have been and how they would have reacted to that type of touch. Nurses responded to the tapes in a similar way. The interactions they viewed on tape helped them remember these patients and, sometimes, the interactions that were shown to them, even though months had passed since they occurred. The segments also provided a stimulus for nurses to talk about other experiences they had using touch with other patients.

Despite initial concerns of the ethics committee about how watching the video segments may effect patients, these fears were unfounded. Patients were interested in seeing the tapes and, for the most part, were comfortable with this procedure. Until they noticed themselves wearing familiar pieces of clothing, initially, two patients did not recognize themselves. This reaction is probably not surprising. People do not often see themselves dressed in hospital gowns and lying in hospital beds. It is also possible that their appearance may have changed with the progression of their illness or with their responses to treatment. For example, one patient stated, "I didn't recognize myself. [R: No?] When I saw that shawl, I said, Oh that's me....I think my face is swollen." All of

the patients recognized the nurses who were caring for them, although some patients knew those individuals better than others. It is interesting to note that several patients requested copies of some segments of the videotapes. Only a few sections of the tape were copied, none of which included nursing staff.

Validity

External Validity

External validity of the study is influenced by two major factors: sample selection and the degree to which videotaped interactions are representative of actual behaviour. Random selection of nurses and patients was not possible, representing the major threat to external validity.

The representativeness of observed behaviors is primarily influenced by observer effects. Natural field observations with the naked eye or with a camera can have an intrusive effect on the persons who are observed and may change their behaviour (Gross, 1991; Kendon, 1979; Lytton, 1971; Scaife, 1979; Scherer & Ekman, 1982). In this study, video cameras were placed on the wall in a patient room, an unusual practice in this clinical setting. It was expected that some people would be conscious about the way that they looked and concerned about what they said or did while being videotaped. Comments to the investigator by a few staff members (for example, "Are we likely to get an Academy Award?" "How am I doing?") reflected some of their reactivity during data collection. However, all the nurses who were interviewed indicated that while they may have been conscious about the videotaping when they first entered the room this quickly disappeared:

> Cause I think the constant factor is once it started, you know, after the first little while, you can't help but fall back in your natural behaviour patterns....I was in the room frequently enough before you actually started your study [Q: With the cameras up?] With other patients, yeah....You don't have time to be looking at, "Oh there's a camera in there. I better be careful."...[You have] ten things on your mind....I think the only thing is that you are aware that, yes you are being videotaped and what's being studied is your vocation, so one tries to drudge up what they studied back at university in communications, you see. You try to do everything but after the first few minutes, even that kind of went out the window.

Indications that nurses simply "forgot about the cameras" because they were too busy to worry about them are supported by others using similar videotaping methods in clinical settings (Morse & McHutchion, 1991). In this study, some nurses also explained that they did not worry about being observed because this was a common everyday occurrence:

> The only thing that I can see that when there's a camera in there it's not different than when there's family members. You know, you sort of go in thinking, like when you walk in, you know someone was watching or could be watching. And so I suppose you do conduct yourself a little bit differently, but it would be the same as if a family member was there. But I think on the whole, you conduct yourself the same whether they're, well, I like to think that I do whether there is or isn't some family member there. So in, in one way I can see that it's not a hundred percent true blue. But on the other hand, I felt it the same as if there was family there.

Sometimes nurses came by the monitoring station to explain their actions to the investigator, especially when they became conscious of the videotaping after the fact. For example, one nurse on leaving the room said to the patient "shout if you need anything." She was immediately embarrassed by this when she remembered that this would have been videotaped. She explained this to the investigator and laughingly commented, "Why did I have to say this? Why not just 'call if you need anything'? But no it was 'shout if you need anything.'" A few nurses told the investigator that they were "nervous" about the videotaping or that they were reluctant to be involved. However, the option of being reassigned was declined by these individuals and the option of asking for the cameras to be turned off when they were in the room was rarely used. There was no indication that these nurses avoided going into the patient's room or spent less time than necessary with the patient; in fact, one patient thought that she had more attention from nurses because of the videotaping. Because the few nurses who made a definite decision to not participate in the study simply asked that the cameras be turned off when they were in the room and/or were assigned to other patients on the ward, there are very few instances on the videotapes of any nervous or unnatural behaviours (e.g., standing out of camera range and talking to the patient).

Nurses who viewed their interactions with patients captured on videotape during follow-up interviews commented that the episodes selected represented their usual way of doing things:

> I remember the day I was in there. I did not feel particularly conscious of the cameras, but I wondered whether I was or not, you know, if it really bothered me. [R: You seemed quite natural.] Yeah. I think I kind of did forget that they were there. But it's kind [of] interesting to just watch how you do interact with patients cause so much of it you just do automatically.

Although several staff members thought that patients would not react normally or naturally during data collection because it would be too hard to forget about the cameras, this did not seem to be the case. The patients paid little attention to the fact that videotaping was in progress and often forgot the cameras were on. A finding that is supported by Broome (1989) who also found that reactivity was reduced by using a similar arrangement for videotaping. During interviews, nurses who cared for the patients reported that they did not notice any changes in patients' behaviour during the data collection period, recognizing that it would be hard to change one's behaviour for a period of 72 hours or that patients were "too sick" to do this. From time to time, some patients did use the cameras as a means to communicate with the researcher, for example, to ask for the cameras to be turned off, to introduce a visitor, or to request that lights in the room be turned down.

With one exception, visitors were also surprising comfortable with the fact that they were to be videotaped. Several mistakenly thought the cameras were simply there so that nurses could monitor very sick patients more closely. When informed about the purpose of the cameras, they often expressed support for the patient's decision to participate in the project in addition to their willingness to be involved. Patients indicated that for the most part they did not observe any changes in their visitors' behaviour as a result of the videotaping. However, on occasion, a visitor would tease the patient about being in the "movies" or wave at the cameras, but this behaviour never lasted very long.

In summary, the problem of distortion of behaviours due to videotaping and the presence of an observer appears to have been minimized in this study. Several factors were

important in achieving this result. First, the project was conducted in a clinical setting where research activity was an accepted and valued norm for both patients and staff. In essence, this meant that people expected to be involved in research projects. Second, the video equipment was installed one month prior to the commencement of videotaping to minimize the effects of the presence of the cameras. Third, the video equipment was organized in a way which reduced intrusiveness of the investigator's presence and data collection procedures and minimized interference with day-to-day activities that took place in the patient's room. Fourth, each patient was videotaped for a period of 72 hours, and nurses were videotaped for the duration of their shift, often over several days either with the same or with different patients. It was, therefore, unlikely that participants would maintain atypical behaviours for the entire time they were being videotaped. Fifth, this was a busy ward. Nurses did not have time to focus on the fact that they were being videotaped. Sixth, while the patients who participated in this study were not in the final stage of their illness, they were all receiving active treatment for cancer. It could be expected that their discomforts and anxieties related to their illness would take precedence, at least some of the time, over concerns about being videotaped. Finally, the investigator was able to establish a relationship with participants that helped to allay any anxiety or apprehension about being involved in this study.

Internal Validity

Internal validity of the study was influenced by sample size, sampling techniques used, time-out requests by the patient or staff, the quality of the filmed data, and the adequacy of the sampling method and the observational schedule. The full range of nurse-patient interactions involving touch was unlikely to have been captured in the videotaped interactions involving the eight patients who participated in this study. For example, nurses described some patterns of touching that were used with dying patients that were not represented in the videotapes. Although a larger sample, including a wider range of patients, may be desirable, ethical constraints may preclude including some groups. As it

was, over 1,000 interactions were captured on videotape. The random selection of 60 nurse-patient interactions provided a sample with which the purposeful sample of 56 interactions could be compared and increased the likelihood that the interactions selected for analysis would be representative of all the videotaped interactions.

Patient and staff requests for the cameras to be turned off were surprisingly few, with one exception. The majority of staff requests involved one staff member and occurred early in the study. Once this problem was recognized, the staff member was reassigned to other patients for the remainder of the study. Patient requests for time-out usually surrounded intimate nursing care activities (such as bathing) or activities related to toileting. The analysis of patterns of touching is limited by this missing data.

The quality of the data is influenced by the type of cameras and VRCs used, the adequacy of the camera view, and quality of the audio recording. The cameras used provided excellent coloured film during daylight hours. Despite low light capabilities, however, the quality of the filming decreased during night-time recording. The use of two video cameras proved to be effective and necessary. By using the remote control pan/tilt and a video switcher, it was possible to keep the nurse and patient in view regardless of which side of the bed or where in the room the nurse was working without drawing attention to the act of videotaping. Occasionally, there was some delay in switching or moving cameras to get an adequate view, and therefore, there was some loss of data, especially if the nurse or patient was moving quickly. Occasionally, because of the nurse's or patient's position in relation to the cameras, it was not possible to see all of the nurse's activities, some of which may have involved touch events. The nurse's face was not always clearly visible, especially when he/she focused directly on the patient with his/her back to the cameras. Repositioning cameras to capture these behaviours would have resulted in the loss of other data (e.g., the patient's face). Adding another camera was not considered a reasonable option because of cost and the fact that three or more cameras in one small private room would have been overwhelming for most participants. A solution,

to be considered in future, may be the use of a "picture-in-picture' monitor or a split screen. As with any type of videotaped data, limitations with respect to a restricted field of vision and lack of depth of focus must be recognized (Goldsmith, 1981).

The use of a high quality PZM microphone and SVHS video cassette recorder increased the clarity of recordings. Back-up recordings were used to ensure that no data were lost. There were some instances were it was difficult to pick up very low conversations, especially if the nurse and patient were some distance from the microphone. Although the microphone was repositioned several times, it was not always possible to predict where nurses and patients would spend most of their time. Having the patient and nurse wear microphones was not considered an option as it would have increased reactivity.

The use of continuous coding within each unit of attending which included a touch event(s) was useful in that it allowed for description of concurrent behaviours and preservation of data related to frequency, duration, and sequence. An aspect of sampling that affected internal validity was the method of determining the onset and offset times of a unit of attending. Nurse attending in reality is a continuous behaviour, with transition periods of varying lengths as nurses move from one type of attending to another. The boundaries indicating the onset and offset times of each unit of attending are therefore arbitrary.

Observational Schedule. In the tradition of ethology, the items of behaviour that made up the observational schedule used in this study were developed from the data rather than using preselected categories of behaviour. Although the selection of these observables may be subject to bias, clear operational descriptions of the items and the use of videotaped data makes it possible to replicate the study and for others to tell what was actually recorded and what was left out (Blurton Jones, 1972).

The validity of the schedule is supported in three ways. First, by using an inductive descriptive phase to facilitate the identification of behaviours of interest, the risk of focusing on insignificant behaviours or missing important or subtle phenomena is reduced

(Blurton Jones, 1972; Morse & Bottorff, 1990). Second, there is evidence in the literature that the categories used in this observational schedule are important dimensions of touch. Descriptors such as initiator, part(s) of body used to touch, location of touch, touch type (i.e., sometimes referred to as the intent of the touch), and form and intensity of touch in addition to duration of contact have been frequently used by researchers investigating touch in observational studies (e.g., Clement, 1983; El-Kafass, 1982/1983; Harrison & Woods, 1991; Le May & Redfern, 1987; Pepler, 1984; Oliver & Redfern, 1990; Schoenhofer, 1989) and can be linked to Weiss's (1979, 1986) theoretical framework of touch. The inclusion of categories of proximity, eye gaze, nurse-patient dialogue, and verbal communication associated with touch are supported by those who advocate a move away from focusing on single channels of nonverbal behaviour to facilitate the understanding of actions that occur in real life situations (Harrison, 1984; Patterson, 1984; Patterson & Edinger, 1987; Siegman & Feldstein, 1987) and other researchers who have found that these behaviours add important dimensions to the meaning of touch (Estabrooks, 1989; Jones & Yarbrough, 1985; Morse, 1983). The categories of nurse activity, patient condition (i.e., in terms of comfort/discomfort), and the presence of others extend the description of the context in which touch occurs. In addition, the category of nurse attending describes the focus of the nurse, a component of the context that has been recognized as more influential than the procedural nature of the touch or its physical characteristics in influencing patients' appraisal of the touch and, subsequently, their arousal (Weiss, 1990). As a whole, the behaviours selected for inclusion in this schedule reflect an important attempt to observe touch from a broader perspective than mere physical contact and, therefore, provide the possibility of eliciting a more complete picture of the touch gestalt (Weiss, 1979) than previous research based on narrow traditional definitions of touch. Third, the validity of this observation schedule is also supported by the findings of this study. Results indicated that different patterns of the behaviours that are represented in the schedule were helpful in differentiating the types of touch.

Reliability

The use of video recordings was essential for the reliability of the study. By using videotapes, instead of completing on-site observations, the likelihood that observers would be able to record behaviours in detail was increased, evaluation of observer error and exploration of areas of disagreement was facilitated, and the influence of observer fatigue was minimized. These advantages of using videotaped data have also been recognized by others (Gross & Conrad, 1991). With the time in hours, minutes, and seconds recorded on the videotapes, onset and offset times could be easily and accurately recorded. Exact transcripts of nurse-patient dialogue could also be prepared and checked for accuracy using this data.

The data were assessed with respect to inter- and intraobserver agreement and interobserver reliability. These were all important. Observer agreement (i.e., the comparison of observers with each other) was used to ensure that observers were accurate and the procedures used replicable. Since observers were not compared to a previously accepted standard, this could not be considered as measure of observer reliability (Bakeman & Gottman, 1986). Generalizability theory was, therefore, used to assess reliability, providing additional information on the accuracy of the measures used. With extensive training, acceptable levels of agreement in using the schedule were obtained, although the component of intensity of touch remained at an unacceptably low level across most checks and agreement with respect to the component of nurse activity showed evidence of observer decay. The results of the reliability check provided further support for the accuracy of the measures assessed and confirmed that nursing activity was not reliable (i.e., at least in one check). The detailed evaluation of observer agreement using agreement statistics that correct for chance and generalizability theory to assess reliability represents an important step in observational studies of nurse-patient touch and is a major strength of this study. Despite criticisms of statistics that do not correct for chance (Hollenback, 1978; Sackett et al., 1978; Topf, 1986), problems were encountered in using kappa when there was a lack

of sufficient variability in the data for accurate calculation or when not all codes were used to record the interactions selected for the agreement check. Preparation of the data for this analysis was time-consuming and costly. In addition, no easy way to allow for a margin of error was found. As Sackett (1987) suggests, good methods for isolating specific sources of unreliability in sequential data are still required.

Although few researchers developing observational schedules to study nurse-patient touch have adequately reported levels of agreement, some comparisons can be made. In previous studies, 71-75% of all touches recorded in interobserver checks were recorded by the two observers involved (Le May & Redfern, 1987; Oliver & Redfern, 1991), comparable to the 70% level achieved in this study (based on interobserver check #2) with three observers. However, levels of agreement ranging from 50% (Schoenhofer, 1989) to as high as 90% have been reported (Mitchell et al., 1985) with on-site observations of touch. In the only study found to investigate touch with the use of videotaped data (Pepler, 1984), levels of agreement were assessed on only five touches and not reported in detail. In using videotapes, it was expected that observers would have had a better chance of recording similar touch events as they could replay tapes and use slow motion. While this does not appear to be the case, this result must be considered in relation to two factors. First, stringent requirements on agreement in this investigation artificially decreased the number of touches recorded simultaneously by all observers. In none of the previous studies was agreement in relation to touch events dependent on the recording of correct onset times to the nearest second. Second, due to camera angles, body positions, lighting, and/or lack of depth perception, some touch events were considered unscorable although a touch could have occurred. The amount of judgement involved in differentiating between scorable and unscorable touch varied considerably. When the touches were not clearly one or the other, higher levels of disagreement could be expected. Thus, limitations related to using videotaped data rather than a more mobile observer may be reflected in these results. Nevertheless, it is possible to conclude that the level of agreement with respect to the

number of touches observed using videotaped data is not inferior to observations done on-site, as some have suggested (Redfern & Le May, 1987).

In all of the observational studies on touch, researchers attempted to classify touch into the two groups: touch used in the execution of activities, procedures, and required tasks and the spontaneous, affective touch that occurs outside of the execution of tasks. However, as indicated by Estabrooks (1989), this typology may be too simplistic and incomplete to facilitate the understanding of touch. This is the first study to extend this typology in an observational schedule with the inclusion of five types of touch: comforting, connecting, working, orienting, and social touch. The kappas for type of touch using these five types of touch are comparable to those reported by others using two touch types completing observations using handwritten schedules on-site or with videotapes (Le May & Redfern, 1987) or using event recorders on-site (Oliver & Redfern, 1991). These results, in addition to the adequate reliability as demonstrated by a generalizability coefficient of .70, indicate that it is possible to discriminate touch in relation to intent in more detail than has been previously attempted without decreasing the quality of the data.

Problems in coding intensity of touch with videotaped nurse-patient interactions have been experienced by other researchers (Harrison & Woods, 1991; Pepler, 1984; Porter, Redfern, Wilson-Barnett, & Le May, 1986), although acceptable levels of agreement were reported when observations focused on videotaped parent-child (Weiss, 1975) or parent-infant (Harrison & Woods, 1991) interactions. When on-site observations of nurse-patient interactions were completed, the reported percentage agreement on intensity of touch was only .67 (Schoenhofer, 1989). It may be that the variation in intensity of touch is not as large in nurse-patient touch events as in parent-child/infant touch and is, therefore, more difficult to discriminate. Further efforts are needed to describe the range of the quality of touch before acceptable levels of agreement can be reached for intensity, although the

degree to which subtle changes in this quality can be captured by observation alone may also need to be considered.

Difficulties have been reported in distinguishing rapidly changing types of forms of touch during on-site observations (Schoenhofer, 1989). Although this was a common occurrence in the data analyzed in this study, the use of videotaped data eliminated most problems in accurately recording these changes. Agreement with respect to touch duration has been a problem in some studies when the exact length of each touch was recorded (Le May & Redfern, 1987; Porter et al., 1986). In this study, the length of each touch episode could be determined easily from the videotapes as the actual time was also recorded on the tapes. Although the reliability of touch duration was influenced by the stringent requirements for agreement in this study (i.e., to the nearest second), acceptable levels were achieved.

Suggested Modifications to the Observational Schedule

Based on the experience of using this observational schedule, several suggestions for revision can be made. To overcome problems experienced in recording nurse activity, codes could be arranged heirarchically so that when more than one activity occurs at the same time a priority system provides a set of rules concerning the precedence among codes. For example, if checking was given precedence over other types of caregiving, this activity would be given priority when it occurred with other activities. Other alternatives would be to drop some codes that were rarely used (e.g., providing environment for leisure activities) or redefine nurse activities in terms of broad conceptualizations of functional relatedness such that a reduction in the number of codes is possible.

Several modifications to refine other parts of the schedule can be suggested. The number of codes in the category of eye gaze should be reduced by combining sustained eye gaze and inferred eye gaze to eliminate redundancy. In relation to the forms of touch, it was recognized during the process of coding that non-moving and press represented differences in intensity rather than form. For this reason, they should be collapsed. In

addition, to improve agreement related to the category of talk associated with the touch, it may be necessary to revise the descriptors of related and unrelated talk. At times, related talk occurred prior to the touch rather than concurrently with it. It may be possible to capture this by including an additional code.

Since observers were able to reliability differentiate between the different types of touch used in this schedule, consideration should be given to splitting working touches into several types. There are several reasons why this might be useful. First, the majority of touches were classified as working touches, and not surprisingly, there seemed to be some differences among the touches that would be classified in this group. For example, some working touches appeared to be given primarily for the purpose enhancing the patient's physical comfort (e.g., back rubs, washing a patient's face, rubbing the sub-cutaneous site when injecting analgesic); others appeared to enhance the patient's feeling of security (e.g., as the nurse guided or supported movement); while other working touches were required simply to complete the procedure being done (e.g., taking a pulse, palpating a sub-cutaneous site), although there may have been some secondary benefits to the patient as a result of these types of contact. Other ways of structuring the types of working touch which may be amenable to observational methods have been suggested by Estabrooks (1989). While including other codes for touch may place an extra burden on observers, more detailed data related to working touch may reveal additional and possibly unanticipated patterns of behaviour that are associated with this type of touch, as demonstrated with the use of orienting touch in this study. Alternatively, if it is shown that patterns of behaviour associated with the different types of working touch are not different, then the decision to group these types into a single class is based on something more than initial hunches.

The observational schedule is nurse-focused and does not accommodate coding of the patient's verbal and nonverbal behaviours to the same degree as these behaviours are coded for the nurse. For example, visual attention of the nurse is coded but not for the patient.

Other categories, such as nurse-patient dialogue, include a combination of nurse and patient behaviours. With minor modifications of this schedule, behaviours of the nurse and patient could be coded separately, although this would increase the time required to code interactions.

Analysis of the data collected in this study was extremely cumbersome. In part, this was due to the fact that observations were of unequal length (i.e., in relation to the interactions, units of attending, and each individual data entry). This is not surprising considering that behaviours rarely last for the same length of time in real life. Other ways of organizing the data file should be explored to facilitate data analyses. In addition, depending on the purpose of the study, it is not inconceivable that the observational schedule developed in this study could be used with other methods of sampling which may increase the ease of statistical analysis.

Discussion of the Findings

Types of Attending

This study is the first to report findings that reveal patterns of nurse-patient interaction that provide support for the premise that context is a critical factor in understanding the use of touch. In this study, four types of attending were identified: *doing more*, *doing with*, *doing for*, and *doing tasks* represent those used by nurses caring for cancer patients during interactions that involve touch. Different patterns of eye gaze, proximity, and nurse-patient dialogue were found to be associated with each type of attending (at the time of a touch event), providing some validity for this typology. A *doing more* type of attending was characterized by an intimate-close proximity and the highest proportion of sustained eye gaze, emotional support and care talk when compared to other types of attending. Whereas, a *doing tasks* type of attending was associated with no sustained eye gaze, silence and an intimate not-close proximity. A *doing for* type of attending occurred in the intimate-close zone and included more social talk and less eye gaze the attending type *doing with*. In the context of *doing with* interactions occurred in either the intimate not-close and

personal zone. Other studies have included the contextual variables in the study of touch, but for the most part, this has been limited to nurse and patient demographic variables, patient diagnosis, or condition and type of ward.

Descriptions of types of attending engaged in by nurses could not be found in the investigative literature, although related descriptions of nursing as an interaction process (e.g., King, 1981; Peplau, 1952) and discussions differentiating "interpersonal styles" (Kasch & Knutson, 1985; Roberts & Krouse, 1988) and competencies (Kasch, 1986) were found in the descriptive literature. The focus of these discussions is on the process of care and the on-going interactions between the nurse and patient (Meleis, 1986)—important aspects of nursing care. The attending types identified in this study provide another way to describe the spectrum of behaviours that are involved in caring actions, incorporating nursing activities that are relevant to communicating with patients as well as those that are not.

Most of the investigative literature focusing on nurse-patient interaction has little relevance to the findings of this study because researchers have focused primarily on verbal communication. Their conclusions that nurses lack effective communication skills are at odds with others who have explored nurse-patient interactions without using communication frameworks generally accepted by nurses (Hunt & Roberson, 1987; Morse, Anderson, Bottorff, Yonge, O'Brien, Solberg, & McIlveen, in press). These researchers have identified exceptional interactional skills (Hunt, 1991; Hunt & Roberson, 1987), "tactics" (McIntosh, 1981), and previously unrecognized expressions of caring (Morse, Bottorff, O'Brien, Solberg, & Anderson, in press) that nurses typically use in clinical settings—skills which are rarely part of communication courses, and some that are often devalued. The findings of this study provide further support that alternative ways of looking at and structuring nurse-patient interaction may be necessary to capture the unique styles of caring that are characteristic of nursing practice. The four types of attending identified in this study capture the dynamic nature of interaction between nurses and

patients from a more global perspective than previous sentence by sentence analysis has allowed, facilitate the identification of subtle changes between and within interactions that were not possible using previous dichotomous descriptions (e.g., therapeutic/non-therapeutic), and take into account more than just the component of verbal communication. Although probably not an exhaustive typology, these types of attending provide an important framework for understanding patterns of caring that has not been previously available.

Only three investigators, Roberts and Andrews (1991) and Frede-Weaver (personal communication, October 2, 1990), were found to describe styles or patterns of caring rather than listing discrete behaviours important to caring. Using inductive methods, Roberts and Andrews have begun to identify two personal nursing styles of caring used by nurses assisting women in second-stage labor—a regulatory or directive style and a responsive or supportive style. Although these styles appear to be linked to personality characteristics of nurses in a way that the types of attending are not, they have observed that some nurses move from one style to the other in response to changes in the patient's needs, while others remain invariant, a pattern also noted in relation to the use of different types of attending. Frede-Weaver has incorporated observations of the type and intensity of attending behaviours, referred to as nurse dispositions, in her research of nurse-patient interactions during second-stage labour. Eleven attending behaviors are organized according to positive and negative affect to form a seven point rating scale. This research is still in progress.

An important underlying assumption of the concept of nurse attending is that single behaviours do not define a type of attending; instead, they are defined by particular combinations of behaviour that occur across a wide range of activities engaged in by nurses and patients. By focusing on such behaviours, these types of attending should be recognized irrespective of individual characteristics of the nurse, the patient, or the

situation, although the extent to which these attending styles describe nurse-patient interactions in other clinical settings still needs to be demonstrated.

The results of this study indicate that individual nurses are capable of using a range of attending styles and often used several during any single interaction. Therefore, suggestions that the use of types of attending was solely dependent on personal characteristics of the nurse could not be supported. It is possible, though, that expert nurses may be more sensitive to indications that they need to change their attending style and that the range of skills they use in all types of attending is broader than those of the novice. Support for this suggestion can be found in Benner's (1984) descriptions of the novice and expert nurse. Interestingly, the amount of time that a nurse spent with a patient did not appear to be one of the determining factors that influenced the type of attending used by the nurse. It is important to note that one type of attending should not be seen as more important or more effective than another when used appropriately. Nurses were observed to use each of these types in various situations to effectively provide patient care. However, the same nurses were also observed to use different types of attending at different times while they completed the same caretaking activity with the same patient as well as with different patients. This raises an interesting question: What other factors influence attending styles? There were some clues from the observations. For example, it was clear from the observed interactions that patients were not passive recipients in these interactions. At times, they were able to stimulate a change from one type of attending to another or to sustain an attending style by simply asking questions, making requests or comments, or by turning away or withdrawing. Yet, at other times, these same behaviours were unsuccessful in influencing style of attending. For example, in one interaction, a patient indicated to the nurse when she entered the room to administer his break-through analgesic that he had "many questions." Although the nurse acknowledged this request for information, her response to his questions was terse, matter-of-fact, and patronizing. These verbal responses coupled with her nonverbal behaviours (e.g., reflected in her

posture and tone of voice) effectively distanced the nurse from this patient's concerns, both physically and emotionally. Therefore, despite the patient's direct questions and nonverbal cues, the nurse chose not to attend to the patient in a way that allowed the patient to explore the answers to his questions or the questions themselves.

Nurses also played an active role in influencing the patient's behaviours during interactions, as each type of attending required different levels and types of patient participation. In her study of nurse-patient relationships, Morse (1991) describes the interplay between nurses and patients as they negotiate and build clinical, therapeutic, connected and over-involved relationships. The interactions in which these types of attending were embedded appear to involve a similar style of interplay, with both the patient and the nurse taking an active role, suggesting that negotiations surrounding relationship issues may be an important influence on attending style.

When levels of involvement and commitment in the nurse-patient relationship as described by Morse (1991) and the four types of attending are juxtaposed as shown in Figure 2, the dynamics that may be fundamental to these nurse-patient interactions becomes more clear. Three of the four types of nurse-patient relationships described by Morse (1991) are depicted on the horizontal axis. "Clinical" relationships are characterized by little if any personal emotional investment in the relationship, and although courteous, the interactions based on this type of relationships are played out in a rote or perfunctory fashion. "Therapeutic" relationships are similarly based on individuals assuming roles of patient and nurse, but in addition, each participant recognizes to a limited extent the person behind this role. For example, the nurse recognizes "normal" fears that accompany various treatments or procedures. The relationship may evolve to a "connected" relationship (the third type of relationship), described as intensive and close, when the nurse and patient interact primarily as persons with a secondary focus on their roles as patient and nurse. The fourth type of relationship, identified as "over-involved", occurs when the nurse and patient are committed to and interact with one another on a person-to-person basis, without

the influence of their respective nurse-patient roles. This type of relationship was not included in Figure 2 as it was not observed between any of the nurses and patients involved in this study. It may be that this type of relationship develops over a longer period of time than the three days as captured on videotape in this study or that it is difficult to detect using observational methods.

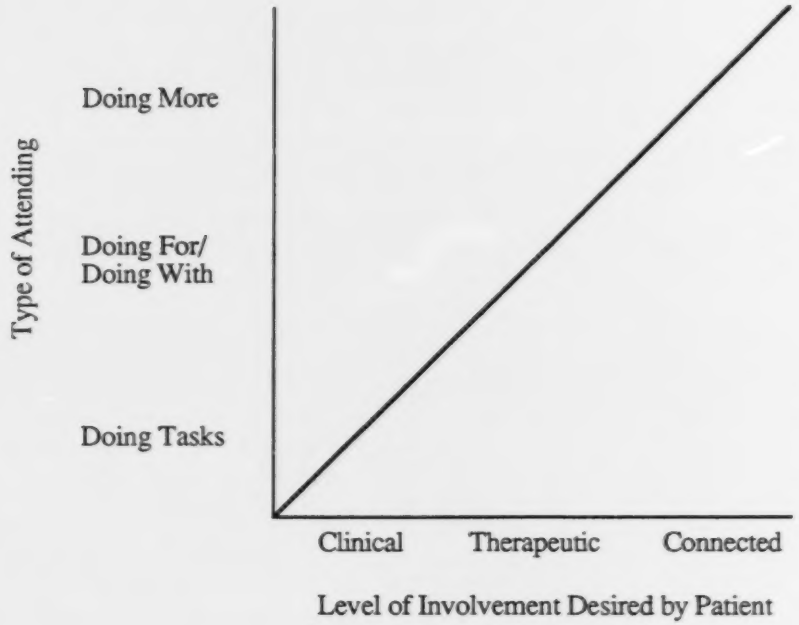


Figure 2. The relationship between type of attending and patient involvement

Morse (1991) suggests that both the nurse and the patient actively control the level of involvement and development of relationships. Three types of relationship are used in Figure 2 to depict the level of involvement the patient desires, with the assumption that patients may desire different levels of involvement at different times. It is also assumed that the nurse's desire for a particular level of involvement is reflected in part by the type of attending she uses.

The four types of attending have been located on the vertical axis in Figure 2. As *doing for* and *doing with* types of attending are fairly similar (i.e., except with respect to the

inclusion of treatment oriented activities), these have been grouped. When the level of involvement and commitment the patient desires and the type of attending engaged in by the nurse are congruent (i.e., as shown on the diagonal in Figure 2), it is likely that the interaction may be more synchronous than if these two factors are incongruent. For example, the patient and nurse would be in synchrony if the patient's desire for involvement in the interaction was characteristic of a clinical relationship and the nurse provided care with a *doing tasks* style of attending.

When the patient's desires related to degree of involvement are "out of step" with the nurse's type of attending (any off diagonal positions on Figure 2), the interaction phase is likely to be characterized by attempts on the part of both the patient and the nurse to influence the other's participation. These phases of asynchrony may be brief, ending in a realignment of the interaction into a more synchronous pattern, or alternatively, they may occur throughout the interaction and result in less satisfactory outcomes for the patient and/or the nurse. Experienced nurses are likely to be sensitive to the patient cues that indicate the level of involvement that the patient may desire at any particular time and when possible adjust their style of attending accordingly. This is likely to be important if the degree to which patients feel that they are able to influence interpersonal situations is related to their response to touch gestures (Heslin & Alper, 1983).

Nurse-Patient Touch

While Weiss (1979) introduced the term "tactile gestalt," (although she did not specifically describe its components) and several attempts have been made to incorporate context into the study of touch (e.g., El-Kafass, 1982/1983; Le May & Redfern, 1987; Pepler, 1984), these have not been particularly helpful in describing some of the differences associated with touch and touching. In this study, four types of attending were used to describe the interactional context in which touch was embedded. The patterns of touch occurring within each of these types of attending were different, suggesting that the use of touch cannot be understood apart from the interactional context in which it occurs.

In fact, Montague (1986) advocates that "emotion, feeling, affect, and touch" are "scarcely separable from one another" (p. 288). These findings are also supported by Heslin and Alper (1983), who suggest that the situational/relational context serve as cues to regulate the kinds of touch that are expected and how they are interpreted. In applying Heslin's touch taxonomy (Heslin & Alper, 1983) to nursing, Clement (1986) indicates that the majority of the touches used by nurses are sanctioned by the functional/professional relationship they have with patients (including fairly intimate touches that would be inappropriate in other kinds of situations/relationships). However, it is difficult to explain the use of affective touches or the different meanings attributed to working touches used by nurses using this taxonomy. It is possible that the functional/professional nurse-patient relationship is mediated by the types of attending that nurses use and, thereby, influence the pattern of touches used as well as their meanings.

Evidence that patterns of concurrent verbal and nonverbal behaviours differentiate types of touch is important. Theoretical frameworks of touch which encompass multiple dimensions of the touch experience have been proposed by Weiss (1979, 1986) and Pepler (1984), and although supported by the work of others (Estabrooks, 1989; Estabrooks & Morse, in press; Jones & Yarbrough, 1985; Morse, 1983), this is the first study to use observational data to describe patterns of nurse-patient touch in a systematic and comprehensive way to extend the study of touch beyond its physical dimensions. Because it appears that the procedural nature of touch and its physical characteristics have less influence on patient arousal than first thought (Weiss, 1991), a better understanding of the contextual meaning surrounding touch may be key to determining the effects of touch received by patients as part of various procedures and comfort measures.

Types of Touch

The five types of touch identified in this study, while different from previous descriptions of touch in the literature, bear some resemblance to them. Working and orienting touch are similar to descriptions of task related touch, and comfort, connecting,

and social touch are similar to the descriptions of affective touch and as such provide empirical support for these broad classifications. A third type of touch, protective touch, described by Estabrooks (1989), was observed occasionally but only in the form of barrier touch (i.e., touch with gloves on), the least emotive type. Because these touches did not appear to be used any differently than working touch or the meaning was altered due to the fact that nurses were wearing gloves, they were coded as working touch, although the use of gloves was also noted. It is possible that other forms of protective touch are difficult to observe (e.g., cold touch) or that nurses are less likely to use more emotive forms of protective touch with cancer patients.

Comfort Touch

Consistent with other studies (Estabrooks, 1989; Solberg & Morse, in press), nurses were observed to give comforting touches in a personal way, frequently using the palmer surface of their hand rather than just their fingers as is common with working touches. These touches involved non-moving, rubbing, and, to a lesser extent, holding and patting forms of contact to patient's arms, hands, or thighs. During interviews, nurses reported using comforting touch in types of situations other than those observed. For example, they indicated that they often stroked the faces of patients who were dying.

Comforting touches occurred most often in the intimate-close zone when patients were uncomfortable and were on average longer than any other type. The tendency for comforting touches to be accompanied by sustained eye gaze and emotionally supportive dialogue more often than other types of touch provides empirical support for a broader definition of touch than simply physical contact.

Comforting touches were most often given in response to indications of patient distress or discomfort, suggesting the intent was to provide emotional comfort. The frequency with which comforting touch was used is difficult to compare with other studies as these touches were not differentiated from other forms of affective touch. However, despite the discomfort that the patients in this study experienced, this type of touch was observed

infrequently, a finding that is congruent with studies done in other settings focusing on comforting touch (El-Kafass, 1982/1983; Schoenhofer, 1989; Solberg & Morse, in press). It may be that nurses deal with the distress and discomfort experienced by patients by becoming detached, using strategies to maintain psychological distance between them and their patients (Davitz & Davitz, 1980; Morse, Bottorff, O'Brien, Solberg, & Anderson, in press)—a phenomena recognized by others in relation to cancer nursing (Bond, 1982, 1983; Quint, 1966) and nursing in other settings (Hutchinson, 1984). When these strategies are used, the nurse does not see a need to comfort the patient to relieve distress. The observations that no comforting touches were observed during *doing tasks* types of attending and that comforting touches occurred most frequently in the *doing more* type of attending when nurses were likely to be most sensitive to patient discomfort provide empirical support for this conclusion.

Connecting Touch

The second kind touch, connecting touch, was used to reinforce the nurse's attention on and concern for patients. The findings of this study reveal that these touches involved non-moving or light strike (i.e., taps) forms of contact to the upper arm or knee, with nurses using their fingers and/or palmer surface of their hands. They were often accompanied by sustained eye gaze, although this was less likely to occur with connecting touch than with comforting touch. Connecting touches occurred most often in the personal zone and, unlike other types of touch, were given primarily when patients were comfortable. The dialogue accompanying these touches was classified as either social talk or care talk, and was fairly evenly split between talk that was related to the touch and talk that was not related to the touch.

No references in the literature to connecting touch could be found, although this type of touch bore some similarity to "encouraging" touch described by Estabrooks (1989) and "attention-getting" touches described by Jones and Yarbrough (1985). Researchers have recently attempted to describe the experience of connecting and have recognized the

importance of this process in caring for cancer patients (Davies & Oberle, 1990; Green, Horner, Murray, & Clayton, 1991). It is possible that connecting touch may play a significant role in this process.

Working Touch

Working touch was the most frequently occurring touch, a finding that has been reported by other researchers investigating the frequencies of task versus non-task touch (Le May & Redfern,1987, 1989; Pepler, 1984; Oliver & Redfern, 1991; Watson, 1975). Working touches were observed to involve rubbing and non-moving forms of contact to the patient's upper trunk and forearm, with nurses using their fingers (and to a lesser extent the palmer surface of their hands). These touches were generally accompanied by brief or no eye gaze and either care talk (of which very little was related to the touch) or silence. Working touches occurred most often in the intimate not-close zone.

Although it has been assumed by many researchers that all types of working touch are the same, it is possible that these touches have different meanings for patients and nurses, depending on the context in which they occur. The "flavoring" of these "relatively dispassionate" working touches that Estabrooks (1989) refers to may be in part a reflection of the type of attending in which it is embedded. For example, when working touch is embedded in the context of *doing tasks,* the nurse focuses on the job to be done, effectively distancing him/her from the patient using behaviours such as avoidance of eye gaze, silence, and the avoidance of touch except for what is essential to complete caretaking tasks. When touch is used in this way, it is similar to the technological touch described by Gadow (1984) and the depersonalized touch of a skillful or gnostic hand described by Bottorff (1991b). As noted by Gadow (1984), when the potency of touch is neutralized, the nurse and patient remain psychically separate (even though not physically separate), at times reducing the patient to object. When touch is used in this way, the potential for creating any bonds or "the risk that one person's subjectivity will flow into another's" (Gadow, 1984, p. 67) is significantly reduced. Touch in this context is, therefore,

characteristically technical and purposefully directed toward the task to be completed, and from the nurse's perspective, few if any messages are intentionally communicated. The distancing that occurs in these interactions may in fact be necessary in instances when nurses need to remain detached or disengaged, such as, when they need to reduce their vulnerability to the pain and suffering experienced by their patients in order to provide care, when they are too tired, too busy, or burned out to continue to be sensitive to the suffering cues of their patients (Estabrooks, 1989; Morse, Bottorff, Anderson, O'Brien, & Solberg, in press), or when the task is such that it demands their full attention (e.g., in taking blood pressures). As such, these touches bear some resemblance to the "protective touches" described by Estabrooks (1989) in that their function is to create distance. However, the distancing observed in these working touches could not always be directly related to the need to protect nurses from emotional pain.

There may be some negative consequences for patients, not unlike the experience of exclusion described by Drew (1986) or indignity as described by Gadow (1984), associated with the use of working touch in conjunction with a *doing tasks* type of attending. The frequency or length of time the nurse interacts with patients in this way or the ability of the patient to cope with feelings associated with these kind of touches may be influencing factors. Alternatively, if nurses use this type of attending for short periods of time to carefully perform complicated, delicate, or otherwise attention demanding procedures, nurses may be able to complete them with such care and attention that patients may find comfort in the professional efficiency and manual skill nurses demonstrate, as indicated by cancer patients in studies by Larson (1984) and Mayer (1987).

In contrast, working touches used in the context of *doing more* appeared to serve as a way to get closer to the patient and, therefore, were used frequently in conjunction with other behaviours to facilitate engagement. Working touch used in this context bears resemblance to Gadow's (1984) description of empathetic touch as "concern made tangible" (p. 68). She describes the principle purpose of these touches not as manipulation

or palpation, but as an "expression of the caregiver's participation in the patient's experience" (p. 67). In using these touches, the nurse is able to overcome the objectivity associated with treatment and engage patient's subjectivity, affirming patients as persons rather than objects. This does not mean that this kind of working touch does not have a skillful element, but as Bottorff (1991b) indicates, in order for the patient to feel cared for or comforted, the nurse's hand must also be guided by knowledge that has a thoughtful caring action as its goal. Certain forms of touch in all but the context of *doing tasks*, such as, touches of long duration involving rubbing or massaging, appeared to be particularly effective in reducing the distance between patient and nurses, as evidenced by the nature of the conversations that often occurred concurrently with activities that included these touches. In addition, the fact that working touches in the context of *doing more* often occur in combination or in sequence with other types of touch, such as, comforting or connecting touches, may also serve to reinforce the meaning associated with them.

The frequency with which nurses use working touch in comparison to other types has been a concern reflected in the literature, implying that this type of touch may be less important and that nurses who use such a great proportion of working touch are not meeting patients' needs (Estabrooks, 1989). The findings of this study add to those of Estabrooks (1989) to contradict these assumptions. In many situations, nurses could influence how the patient would experience various caretaking procedures by the type of attending they use. The therapeutic use of working touch for other than simply completing procedures needs to be recognized and explored.

Orienting Touch

Orienting touch occurred most frequently in the context of *doing with,* as nurses attempted to clarify issues or concerns with patients. They consisted of light strikes or brief rubbing contacts to various parts of the body with the nurse's fingers. During these touches, the nurse's eyes were usually directed toward the area that was being touched. Unlike most working touches, these touches were accompanied by related verbal

communication that justified the touch. Given in the context of an intimate not-close proximity, orienting touches were on average the shortest type of touch.

Support for this type of touch can be found in two studies. Jones and Yarbrough's (1985) findings include a category that refers to touches that point out or inspect a body part. Although limited to touches that are accompanied by verbal comments related to appearance, the orienting touches identified in this study are closely aligned with the type of touch included in this category. In a classification of expressive touch, El-Kafass (1982/1983) includes touches "to orient the patient" as one of eight types of touch. This category is limited by definition to touches used to orient semiconscious, unconscious, or sleeping patients, but conceivably, it could be extended to include the type of orienting touches used with alert patients as observed in this study.

Social Touch

Although very few of these touches were observed in the sample selected for analysis, these touches were unique in that they occurred in the context of truly social exchanges (e.g., teasing) and appeared to be important in enhancing the relationship between nurses and patients. These touches are similar to playful, "fun/happy touches" (a sub-seggregate of encouraging touch) described by Estabrooks (1987a). Like the social touches observed in this study, fun/happy touches carried an element of reciprocity within them that was particularly notable. Because of the potential value of this type of touch, further study of its use and meaning is warranted.

Implications

Nursing Practice

The most important implication of the findings of this study for practice is that an awareness of the types of attending, kinds of touch, and the relationship between attending types and touch offers nurses a means by which to understand an aspect of caring that is central to nursing practice and affords nurses the opportunity to change an area of practice to meet the needs of individual patients, thereby increasing the therapeutic value of touch as

a nursing intervention. With knowledge of the variety of touches used by nurses, for example, touch interventions could be specifically incorporated into nursing care plans based on an assessment of the needs of individual patients. It must be recognized, though, that the effects of touch on the psychological and physiological well-being of patients are not well understood at this time.

The finding that patients experiencing discomforts associated with cancer and/or its associated treatment receive relatively few comforting touches needs to be carefully considered by nurses in light of suggestions that needs for touch may increase with illness. Although it is possible that nurses comfort these patients in ways that do not involve physical contact, it may be that patients' needs for comforting physical contact are not being met. The findings of this study also indicate that the predominant use of working touch in nursing practice should not be undervalued. Nurses are likely to have the potential to significantly alter patients' experiences associated with this type of touch. One way they may do this is by varying the type of attending they use.

Knowledge of the types of attending identified in this study may also be helpful to nurses in other ways. It appeared that some nurses were more invariant in the use of these types of attending than others. If patient needs are such that care from a variety of types of attending is necessary, then nurses who are more flexible in their approaches to caring are likely to be more effective in meeting patient needs and achieving desired patient outcomes. Sensitivity to the different types of attending may afford nurses the opportunity to tailor their care to the individual needs of their patients.

Future Research

Several implications arise from this study for future research. They can be divided into three categories: 1) extension of study analysis, 2) secondary analysis of the data collected in this study, 3) methodological implications, and 4) future areas of study.

Extention of Study Analysis

One of the most obvious ways the data collected and coded in this study could be used to extend the findings of this study is to use sequential analysis techniques (Bakeman, 1978; Bakeman & Gottman, 1986; Sackett, 1979, 1987; Sackett, Holm, Crowley, & Henkins, 1979) to detect any recurring chains or sequences of behaviour that may be associated with the different types of touch and different types of attending. If the data were recoded to include a description of patient behaviours in more detail than was captured in this study, it may be possible to identify behavioural cues that initiate various types of touch interventions as well as patient response patterns to different types of touch. The sequencing of types of attending and types of touch could also be studied using this data.

Further description of the interaction in which touch occurred could be completed. For example, cues that trigger touch could be studied in more detail as well as the outcomes of touch. Further more, other behaviours associated with touch could be studied. In particular, the influence of the quality of the nurse's voice merits study. It is well established that infants respond to the tone, frequency, duration, tempo, and intonation contours of their mothers' voices. A secondary analysis could be completed to identify how the qualities of the nurse's voice, in concert with other behaviours such as eye contact, contribute to the differentiation of types of touch and patient's responses to touch. The quality of voice qualities could be assessed by using digital signal analysis (Scherer, 1982) of the audio part of the videotapes.

A better understanding of the different types of working touch, how nurses use working touches in different contexts, and the responses of patients to these touches could be facilitated through further research. For example, the videotapes could be used to select a sample of similar types of nursing tasks that involve touch. These could be compared and contrasted to identify distinguishing characteristics in relation to touch behaviours, associated verbal and non-verbal behaviours, and patient responses.

Secondary Analysis of Data

A wealth of data has been collected on the videotapes obtained during this study. As such, the tapes could serve as a basis for numerous other studies. For example, investigating other ways nurses comfort patients without using physical contact or describing the ways nurses, patients, and family members use humor could be studied using these tapes. In some situations, the same nurse looked after a patient for several days. In these instances, it may be possible to describe the development of the nurse-patient relationship using inductive methods.

Methodological Implications

By using an inductive ethological approach to study nurse-patient touch, important aspects of nurse-patient touch were identified that would not have been possible using the less refined, deductively-based observational approaches that have been used in the past. This approach permitted the identification of nurse and patient behaviours that were important to observe rather than deciding this *a priori* and facilitated the study of complex behaviour patterns at fine levels of detail. Using this method, it was possible to identify and observe some of the components of the touch gestalt, giving recognition to the importance of the context in which touch occurs, something previous researchers investigating touch as a single channel of communication have ignored. The validity of observational research in the area of touch will be strengthened to the extent that these or similar methods are used.

The use of additional methods in combination with observational approaches will also strengthen the validity of future research. Interviews with patients and nurses were an invaluable addition to the observational data collected in this study. Other methods, triangulated with observational approaches, could also enhance our understanding of touch.

Future Areas of Study

This descriptive study provides researchers with a baseline for subsequent investigations of nurse-patient touch. Future investigations in other settings which focus

on the care of cancer patients or the care of other types of patients experiencing discomfort (e.g., post-operative or obstetrical patients) are necessary to support the validity of the findings of this study and establish normative patterns of touching. In particular, the use of touch when painful or potentially distressing procedures are administered warrants further study. The observational schedule developed in this study could be used to describe variations in behaviours associated with touch in relation to such factors as age, sex, or ethnicity.

Further research is needed to support the validity of the four types of attending. Examination of the kinds of attending used in other clinical settings, the conditions under which each are used, and the responses of patients to each are needed. The sequencing of these attending styles also deserves further study. Normative patterns of attending also needs to be studied further, especially in relation to different clinical contexts. For example, patterns of attending may be different if patients are unconscious, in agony or not experiencing life-threatening illness. There is evidence to suggest that patients' active and passive negotiation for different levels of involvement may be one factor influencing the types of attending used by nurses. Studies need to be designed to verify this idea. Intervention studies could also be conducted to identify if different patient outcomes are associated with each type of attending.

Summary

This study examined the interactions between nurses and patients in an acute oncology unit in order to develop a method and instrument for the description of nurse-patient touch. Despite the predominate use of touch in practice, very little is known about the specific way that nurses use touch. Previous researchers have tended to ignore the complexities inherent in describing nurse-patient touch and the interactional context in which touch is embedded. The purpose of this study was to develop a method and instrument to facilitate the description of touching patterns that were used with patients experiencing discomfort by

taking into account a wide range of verbal and nonverbal behaviours. The research method of ethology was incorporated into the exploratory-descriptive design of the study because it facilitates systematic observation, analysis, and interpretation under natural conditions.

Videotaped interactions with eight cancer patients and the nurses who cared for them and open-ended interviews with 14 participants were the major source of data. Extensive examinations of the videotaped interactions during the inductive phase lead to the development of an ethogram, a detailed description of the behavior patterns under study. Using these descriptions, an observational schedule was developed and refined. A purposeful sample of 56 interactions and a random sample of 60 interactions that included touch events were coded using a continuous sampling method. Acceptable levels of inter- and intraobserver agreement were established and maintained throughout the coding process, with the exception of nurse activity and intensity of touch.

Five kinds of touch were identified in this study: comforting touch, connecting touch, working touch, orienting touch, and social touch. Comforting touches, given most often in an intimate-close proximity when patients were uncomfortable, were on average longer than any other type of touch. The tendency for comforting touches to be accompanied by sustained eye gaze and emotionally supportive dialogue more often than other types of touch provides empirical support for a broader definition of touch than simply physical contact. The second kind touch, connecting touch, was used to reinforce the nurse's attention on and concern for patients. The findings of this study reveal that these touches were often accompanied by sustained eye gaze, although this was less likely to occur with connecting touch than with comforting touch. Connecting touches occurred most often in the personal zone and, unlike other types of touch, were given primarily when patients were comfortable. The dialogue accompanying these touches was classified as either social talk or care talk. Working touch was the most frequently occurring touch. These touches were generally accompanied by brief or no eye gaze and either care talk (of which very little was related to the touch) or silence. Unlike most working touches, orienting touches were

accompanied by related verbal communication that justified the touch, and these touches consisted of light strikes or brief rubbing contacts to various parts of the body with the nurse's fingers. During these touches, the nurse's eyes were usually directed toward the area that was being touched. Although very few social touches were observed in the sample selected for analysis, these touches were unique in that they occurred in the context of truly social exchanges (e.g., teasing) and appeared to be important in enhancing the relationship between nurses and patients.

These touches are comparable to the two major kinds of nurse-patient touch previously identified in the literature. Working and orienting touch are similar to descriptions of task related touch, and comfort, connecting, and social touch are similar to the descriptions of affective touch. However, detailed qualitative and quantitative descriptions of these types of touch and the variations in associated verbal and nonverbal behaviours that were found to accompany each provide more comprehensive descriptions than has previously been available. In particular, the use of connecting touch, orienting touch, and social touch have not been well recognized or described. In addition, this study is unique in that observational data were used to describe patterns of nurse-patient touch in a systematic and comprehensive way in order to extend the study of touch beyond its physical dimensions.

This study is the first to report findings, based on clinical observations, that provide support for the premise that the interactional context in which touch is embedded is a critical factor in understanding the use of touch. In this study, four types of attending that represent those used by nurses caring for cancer patients during interactions that involve touch were identified: *doing more*, *doing with*, *doing for*, and *doing tasks*. Patterns of touch were found to vary depending on type(s) of attending used during interactions with patients. When units of attending were classified as *doing more*, there was a greater likelihood that these units included a variety of touches. Whereas, units classified as *doing tasks* included predominantly working touches. Different patterns of eye gaze, proximity, and nurse-patient dialogue were also found to be associated with each type of attending.

Touch and touching are complex phenomenon which form an important aspect of nursing practice. The development of prescriptive and predictive nursing theory regarding the use of touch depends on the development of a thorough understanding of touch interventions. However, the lack of attention to the complexities inherent in describing touching and being touched and the interactional context in which touch occurs has retarded progress. The contribution of this study to existing touch research is the development of a method and a valid and reliable observational schedule that can be used to study touch which fills this gap.

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APPENDIX A

A METHODOLOGICAL REVIEW AND EVALUATION OF RESEARCH ON NURSE PATIENT TOUCH

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A Methodological Review and Evaluation of Research on Nurse-Patient Touch

Although nurses have traditionally held caring as an important aspect of nursing practice, the importance of using systematic investigation to identify the nature and qualities of caring practices has only recently been recognized. One nursing action, nurse-patient touch, has frequently been linked to caring (Bailey, 1984; Boyd, 1986; Farrah, 1971; Gadow, 1985; Hernandez, 1988; Leininger, 1981; McCoy, 1977): it is an aspect of practice that is universal and basic to the nurse-patient relationship. In the past, relatively little was known about nurses' use of touch as an intervention, but recently, attention has become increasingly focused on clarifying this component of practice (Burnside, 1981; Gentner, 1980; Ingham, 1989; Weiss, 1988). Thus far, the research literature has been characterized by considerable variation in approach and methodological rigor (Weiss, 1988). This review, which concentrates on methodological issues, was undertaken to provide an evaluative and orientative overview of previous research and provide direction for future studies.

In preparing this review, published and unpublished studies in which the phenomenon of nurse-patient touch was of either major or minor interest were examined. Although most of this research was conducted by nurses, studies by non-nurses were also included. Studies of touch that did not directly involve nurse-patient touch (e.g., mother-infant touch) and studies related to therapeutic touch (as described by Krieger, 1975) were generally excluded; however, therapeutic touch studies that involved "ordinary" touch between nurses and patients were considered. This review is based on a total of 27 unpublished and 56 published research reports (covering the 30-year period from 1959-1989) located through computer searches (Medline, Psychology, and Sociology Abstracts) and follow-up of citations from reference lists.

Definitions of Nurse-Patient Touch

Most researchers have defined touch in relation to the physical contact or tactile stimulation it encompasses and its communicative role. For example, Weiss' (1979) conceptualization of touch has been influential in the study of nurse-patient touch. With a focus on describing the physical qualities of the act of touch, she suggests that these qualities, along with the intent of the caregiver, may be useful in differentiating between different types of touch. The four qualities given primary importance are location (that part of the patient's body that is touched), intensity (extent of indentation or pressure of the touch), action (the specific gesture or movement used in touching), and duration (the temporal length of the touch). For Weiss (1979), these "tactile symbols" form a language of communication and shared meaning. From this perspective, touch is viewed as a channel of communication that can function independently of others and, consequently, can be studied in isolation from other forms of verbal or nonverbal communication. As such, when other verbal or nonverbal behaviors have been considered in addition to skin-to-skin contact, they have not been considered as part of the touch itself. Rather, they have been considered as factors influencing the effectiveness of touch (Chen, 1986/1987), as accompaniments to touch (Pepler, 1984; Schoenhofer, 1989), or as measures of the effectiveness of touch (El-Kafass, 1982/1983; Knable, 1981; Langland & Panicucci, 1982; McCorkle, 1974).

There are indications in the literature, however, that a broader concept of touch may be necessary. For example, when Estabrooks (1987a, 1989) interviewed nurses about the kinds of touch they used in practice, the nurses had difficulty defining touch, yet they could describe various dimensions that, in addition to skin-to-skin contact, included voice, posture, affect, emotional contact, and context. The examples nurses gave of touch clearly showed that touch meant more to them than mere physical contact. In trying to interpret these findings, Estabrooks used Weiss' (1979) conceptualization of touch as a complex gestalt, suggesting that touch could not be entirely understood by identifying its

components or dimensions. These notions of touch are not entirely new. In the descriptive literature, nurses (Gadow, 1984; Kelly, 1984; Paulen, 1984; Ujehly, 1979) and others (Heylings, 1973; Montague, 1986) have referred to other forms of touch that extend beyond the relatively narrow focus of most researchers. For example, Montague (1986) includes eye contact as a form of touch: "Seeing is a form of touching at a distance" (p. 124). And Paulen (1984) discusses "touching the spirit of another human being" (p. 201). From this literature it is clear that researchers have tended to address a single dimension of nurse-patient touch within a fairly narrow context. The use of a broader concept of touch would lead to the formulation of different questions, the use of different designs and methods of data collection, and the consideration of the interactive nature of a larger number of variables.

The Description and Measurement of Nurse-Patient Touch

Two methods—self-report and observational—have been used to describe and measure the various dimensions of nurse-patient touch. Developments in the use of these data collection strategies will be traced, the underlying methodological assumptions will be examined, and areas in which the current literature can suggest future directions for research will be discussed. While it is recognized that psychological instruments and physiological indices have been used to study nurse-patient touch, this discussion will focus on methods that have been developed for the specific purpose of measuring aspects of nurse-patient touch.

Self-Report Approaches

Three types of self-report techniques—projective, questionnaires or survey, and interviews—have been used to elicit and measure the various dimensions of nurse-patient touch (Table A.1).

Projective Techniques. Projective techniques, which include a variety of ambiguous stimuli that allow free response, are based on the assumption that interpretation of, and reaction to, such stimuli reflect an individual's needs, attitudes, values, and personality

characteristics (Waltz, Strickland, & Lenz, 1984). These techniques have been used to describe both the patient's and the nurse's perceptions of or responses to touch. Day (1973) and DeWever (1977) studied perceptions of touch by analyzing the responses of patients to slides and photographs involving different nurse-patient touching situations. Similarly, Trowbridge (1967) used photographs to compare nurses' and patients' interpretations of touch, while Le May and Redfern (1987) used eight pairs of photographs to determine nurses' and patients' preferences for touching and being touched. (The photographs within each pair were similar, except that in one of each pair the nurse is touching the patient, but not in the other.) Although Day (1973) argues that subjects may respond more freely to these techniques than to a more direct method (e.g., questionnaire), others criticize the use of this approach in touch research. For example, Knapp (1983) contends that it is invalid to assume that subjects responding to photographs or videos would have the same motivation and involvement as people making judgements in face-to-face encounters in high-information contexts.

Questionnaires. Systematic self-report measures, in the form of questionnaires and attitude scales, have been used to describe and assess the following: the meanings or messages associated with nurse-patient touch (De Augustinis, Isani, & Kumler, 1963; Pepler, 1984; Pratt & Mason, 1984); nurses' attitudes toward touching (Burkhardt, 1975; Ellis, Taylor, & Walts, 1979; Farrah, 1971; Tobiason, 1981); nurses' awareness and perceptions of touch (Miller, 1976); patients' feelings as a result of intrusion into personal space which in part is associated with a nurse's touch (Allekian, 1973; Lane, 1989); patients' recollection of touch (McCorkle, 1974); patient attitudes toward nonprocedural touch (Fisher & Joseph, 1989); and patients' perceptions of their experiences during labor, including the nurse's use of touch (Lorenson, 1983). Questionnaires have become progressively more structured as researchers have moved from using open-ended questions related to a variety of issues associated with nurse-patient touch (e.g., De Augustinis, Isani, & Kumler, 1963) to using more narrowly focused questionnaires characterized by

Table A.1: Research Studies using Self-Report Approaches to Describe Nurse-Patient Touch

Author (Yr)	Type of Self-Report	Subjects (N)	Dimensions of Touch Described/Measured	Reliability/ Validity
De Augustinis et al. (1963)	Q—open-ended questions	Nurses (9), psychiatric patients (9)	Frequency, patterns of use, types of touch gestures, meanings of touch	Not addressed.
Trowbridge (1967)	PM—Seven pictures of nurse touch	Nurses (30), patients (30)	Interpretations of touch, similarity between patients and nurses	Not addressed.
Farrah (1971)	Q—Vignettes with forced-choice alternatives and open-ended questions	Medical/surgical nurses (49)	Frequency, patterns of use, meanings of touch	Not addressed.
Durr (1971)	I-Not described	Medical/surgical patients (13)	Meaning of touch, attitudes toward touch	Not addressed.
Day (1973)	PM—Eight slides of nurse touch	Medical/surgical patients (20)	Attitudes toward touch	Not addressed.
Allekian (1973)	Q—27 statements with forced-choice response format	Adult patients (76)	Feelings in response to intrusion	Not addressed.
McCorkle (1974)	Q—Four open-ended questions	Critically ill patients (60)	Recollections of touch and nurse who used touch	Not addressed.
Burkhardt (1975)	Q—Attitude scale	Nurses (38), nursing students(55)	Attitudes toward touch	Reliability: .30.
Miller (1976)	Q—20 statements with forced choice response format	Nurses [24]	Awareness and perception of touch	Content validity.
Stolte (1976/77) Penny (1979)	I—Structured	Obstetric patients(150)	Patterns, types, and meanings of touch; attitudes toward touch	Content validity.
DeWever (1977)	PM—Photographs of affective touch	Elderly Patients (99)	Attitudes toward touch	Reliability: .70-.98; construct validity using factor analysis.
Ellis et al. (1979)	Q—Not described	Nursing students (100)	Attitudes toward touch	Not addressed.

Table A.1 (continued)

Author (Yr)	Type of Self-Report	Subjects (N)	Dimensions of Touch Described/Measured	Reliability/ Validity
Tobiason (1981)	Q—Open-ended questions	Nursing students (69 pre-test and 52 post-test)	Attitudes toward touch	Not addressed.
Lorensen (1983)	Q—10 forced-choice and 1 open-ended question	Obstetric patients (12)	Patient perceptions of experience during labor with two questions directly related to use of touch by nurses	Not addressed.
Morse (1983)	I—Open-ended, ethnographic	Mothers (2), nurses (2)	Patterns of use of touch	Reliability and validity: intra- and inter-subject agreement.
Pratt & Mason (1984)	Q—28 statements with 10 response categories provided	Lay participants (30) and health practitioners (46-includes 9 nurses)	Meanings of touch	Not addressed.
Pepler (1984)	Q—Touch Message Scale	Nurse aides (25) elderly patients (41)	Relational messages of touch	Reliability: .64 - .94; construct validity using item correlations.
Torres (1985)	Q—Attitude and Feeling Survey	Nursing students (25)	Attitudes and feelings related to touch and interaction in close proximity	Test-retest reliability: .86.
Birch (1986)	I—Structured	Obstetric patients (30)	Patterns of use, types, and meanings of touch, attitude toward touch, context of touch	Not addressed.
Redfern & Le May (1987)	PM—Eight pairs of photographs	Elderly patients (86), nurses (133)	Preferences for touching and being touched	Not addressed.
Estabrooks (1987a, 1989)	I—open-ended, ethnographic	ICU nurses (8)	Frequency, patterns of use, types, and meanings of touch, attitudes toward touch, context of touch	Reliability—documentation of decision trail; validity—criterion of adequacy, meaningfulness to audience.

Table A.1 (continued)

Author (Yr)	Type of Self-Report	Subjects (N)	Dimensions of Touch Described/Measured	Reliability/ Validity
Lane (1989)	Q—Territory/ Interpersonal Space Questionnaire	Nurses (80), surgical patients (80)	Feelings in response to intrusion	Reliability: .64-.85; construct validity using factor analysis.
Fisher & Joseph (1989)	Q—Attitude scale (15 items)	Medical/surgical Patients (52)	Attitudes about nonprocedural touch	Reliability: .68; construct validity using factor analysis.

Q—Questionnaire.
PM—Projective Measure.
I—Interview.

statements with forced-choice response formats (e.g., Lane, 1989; Pratt & Mason, 1984). However, relatively little progress in measuring aspects of nurse-patient touch has been made using self-report measures. Many of these instruments lack a sound conceptual basis; in addition, the tendency to use investigator-developed, unvalidated measures has made it impossible to compare studies. Only one instrument has been developed and tested in more than one investigation (Allekian, 1973; Lane, 1989). Those who have assessed the reliability and validity of newly developed instruments (Burkhartd, 1975; Fisher & Joseph, 1989; Lane, 1989; Pepler, 1984) have found the results to be informative, although not always favorable. For example, Burkhartd (1975) reports a low reliability (Cronbach's alpha = .3078) for a 24-item questionnaire used to measure nurses' attitudes toward non-necessary touch. Pepler's (1984) evaluation of the Touch Message Scale led to the conclusion that the instrument's reliability and validity were questionable when used as a self-report measure, although its use as an observational tool was supported. These results illustrate the need to rigorously develop new instruments.

The need to move beyond this initial stage in the measurement of nurse-patient touch toward the development of more refined measures (as researchers who are interested in touch outside the nursing context have done) is urgent. Instruments such as the Touch Avoidance Measure (Andersen & Leibowitz, 1978) and the Same Sex Touching Scale (Larsen & LeRoux, 1984) are an improvement over earlier methods of measurement because they have been developed from conceptual definitions or empirical findings and because their psychometric properties are more fully established; however, those who developed these instruments recognize that further evaluation is needed. For example, Andersen, Andersen, and Lustig (1987) raise questions concerning the relationship between attitude scores and actual patterns of touching and the degree to which attitude scales can be used to predict the tactile behavior of individuals in different kinds of relationships. Because researchers involved in instrument development outside of nursing have, for the most part, employed strangers and university students, these instruments may

not be suitable for measuring any aspect of nurse-patient touch with specific clinical populations and the nurses who work with them. The development of sound instruments is fundamental to the advancement of knowledge related to nurse-patient touch, and this development is dependent on a commitment to further conceptual work in this field and the systematic evaluation of measures.

Interviews. Although interviews provide an in-depth method of obtaining information on complex processes such as touch, this approach has not been used as extensively as other self-report techniques in studying nurse-patient touch. In early studies detailed descriptions of interviewing techniques used were often not included (e.g., Durr, 1971). However, more recent reports have included both data analysis strategies and more detail with regard to interviewing techniques. Stolte (1976/1977) and Birch (1986) used similarly structured interviews to describe patients' perceptions of touch during labor, while Estabrooks (1987a, 1989) and Morse (1983) used an open-ended style of interviewing to support the inductive nature of their studies of nurses' descriptions of touch and comfort (of which touch was viewed as an important aspect). By using interviews, researchers have been able to provide detailed descriptions of a broad range of the dimensions involved in nurse-patient touch, and this important descriptive and conceptual information is needed to guide future quantitative studies. The use of interview techniques, however, depends heavily on the ability of respondents to be insightful about their touch behaviors and responses to touch and their willingness to share this information. If some dimensions of nurse-patient touch are too personal or private to be explored by direct questioning (or observation), the use of questionnaires may be preferable.

Methodological Assumptions and Implications. Three major assumptions have direct implications on the use of structured or semi-structured self-report techniques in studying nurse-patient touch. First, it is assumed that investigators understand tactile codes, meanings, and behaviors well enough to identify relevant factors and ask appropriate questions (Jones & Yarbrough, 1985). Yet the incomplete understanding of the concept of

touch in nursing (Estabrooks, 1987a, 1987b; Weiss, 1979, 1986) and problems achieving respectable estimates of reliability and validity (when this has been attempted) seem to make this assumption very tenuous. By using open-ended interviews and qualitative methods, Estabrooks (1987a, 1989) and Morse (1983) were able to make important contributions to the description and conceptualization of touch. Further inductive research is needed to provide detailed descriptions of a broad range of dimensions of nurse-patient touch on which the development of structured measuring instruments and experimental studies can be based.

Second, by using questionnaires, certain researchers (e.g., Pratt and Mason, 1984) have assumed that touch gestures can be meaningfully interpreted when respondents are provided with statements that describe unambiguous situations involving touch. However, Knapp (1983) argues that it is unrealistic to assume that the intents or meanings attributed to statements describing touch behaviors are the same as the intents or meanings that would be attributed in similar real-life situations where touches are experienced in the context of other nonverbal behaviors, interpersonal relationships, and situational and historical factors. For example, Pepler (1984) found that multiple factors were involved in interpreting the relational messages represented in touch gestures between nursing aides and elderly nursing home residents. It also appears that several incompatible interpretations related to intimacy and status can be ascribed to any particular touch gesture (Major, 1981); that specific touch gestures do not have universal meanings, even within the same culture or context (De Augustinis et al., 1963); and that contextual factors are critical to the meaning attributed to touch (Jones & Yarbrough, 1985). The characteristic ambiguity of the meanings associated with touch may limit the precision to which they can be described, at least with the structured forced-choice response formats that are currently available. Development of innovative ways to measure nurse-patient touch is needed.

Finally, the use of direct methods of questioning to examine nurse-patient touch is based on the assumption that individuals are sufficiently aware of experiences with touch to

recall and report them accurately (Jones & Yarbrough, 1985). Individuals may not be sufficiently aware of their experiences with touch to recall and report the details needed to describe many aspects of complex behavioral interactions (Benner, 1984; Brannigan & Humphries, 1972; Burnside, 1977). For example, can nurses be expected to remember how many times they had eye contact while touching a patient or precisely what stimuli evoked the touching behavior? If such behavioral sequences and interactions are seen as important, and if nurse-patient touch is believed to be sufficiently complex to require detailed analysis, total reliance on direct questioning using either an interview or questionnaire may lead to disappointing results. At the same time, it must be recognized that the private dimension of the experience of touching and being touched (Pratt & Mason, 1981) may only be accessible through self-report of some kind.

Observational Approaches

Twenty-one studies that used observational approaches to describe spontaneous nurse-patient touch were located (Table A.2). In all instances observations were carried out in hospital wards, with a few researchers (Blackburn & Barnard, 1985; Pepler, 1984; Watson, 1972/1973, 1975) making their observations using videotaped recordings of touch interactions. Observational strategies included the simple recording of frequency and location of touch (Barnett, 1972), ethnographic descriptive levels of observation (De Augustinis et al., 1963), and, more recently, the use of more rigorous and complex observational schedules in which patterns of touch were coded for information on touch quality, as well as for nurse and patient characteristics and context variables (Le May & Redfern, 1987; Pepler, 1984; Porter, Redfern, Wilson-Barnett, & Le May, 1986; Redfern & Le May, 1987; Schoenhofer, 1989). The results are difficult to compare because researchers observed touch in a variety of settings with different kinds of subjects; focused on different types of touch; and used different sampling strategies, coding schemes, and data collection tools. In addition, researchers have paid little attention to describing the

context in which the touching took place or to the effects of observation on the variables being studied (Weiss, 1988).

Observations in these studies have focused on various dimensions of touch. In relation to the "quality of touch," several researchers have tried to use Weiss' (1979) framework to guide their observations. The number of qualities used has varied, as have the coding and precision of observations. For example, the duration of touch has been coded as "long or short" (Schoenhofer, 1989), rated with two different four-point scales (Clement, 1983; Porter et al., 1986; Redfern & Le May, 1987), and measured in seconds (Pepler, 1984). The purpose or meaning of the touch was interpreted by the observers in six of the studies; for the most part, interpretation involved classifying touch into broad categories (e.g., instrumental and expressive). Although it is suggested in the literature that the types of touch may not be as separate as was first thought (Estabrooks, 1989; Watson, 1975; Weiss, 1986), observations suggest that these categories were viewed as quite distinct. Even if it is possible to observe both the expressive and instrumental significance of any particular touch, given the level of specificity of observations in these studies, it is probably impossible to obtain the fine discrimination that may be needed to study the expressive features of an instrumental touch or visa versa.

Table A.2: Research Studies using Observational Approaches to Describe Nurse-Patient Touch

Author (Year)	Type of Touch Observed	Mode of Observation/ Setting	Sampling Methods	Observational Outcomes	Reliability
Charlton (1959)	Any physical contact	Live/ psychiatric	Sequence sampling (?S)[a]	Observed 24 sequences involving patient or nurse-initiated touch	Not reported.
De Augustinis et al. (1963)	Any physical contact	Live/ psychiatric	Sequence sampling (CS[b])	Six - 1 hour observation and interviewing periods yielding 22 nurse-initiated touches	Not reported.
Marshall (1969)	Any physical contact	Live/ labor and delivery	Focal subject (CS) all-occurrence sampling	Varied lengths of observation periods with five primigravidas yielding 794 touches	Not reported.
Barnett (1972)	Non-necessary touch	Live/ nine hospital wards	All-occurrence sampling with random selection of time and place to conduct observations	180 30-minute observation periods yielding 452 occurrences of non-necessary touch	Not reported.
Watson (1972/1973, 1975, 1979-80)	Any physical contact	Video/ geriatric institutional setting (two wards)	Sequence sampling with random selection of time periods to conduct observations	839 behavioral unit sequences yielding 187 interactions involving touch	74-80% agreement.
Griffin (1978)	Any contact that is in addition to procedural contact	Live/ emergency room	Focal subject (CS) one-zero sampling with randomly selected periods of time and area for observations	Observed 88 nurse-patient encounters, 43 of which were touch encounters	Not reported.
Copstead (1980)	Any physical contact	Live/ nursing home	Focal subject (RS)[c] all-occurrence sampling during administration of medications	33 observation periods with 33 subjects, of whom 22 experienced touch	81% agreement (total instrument).

Table A.2 (continued)

Author (Year)	Type of Touch Observed	Mode of Observation/ Setting	Sampling Methods	Observational Outcomes	Reliability
El-Kafass (1982/1983)	Expressive touch	Live/ four ICUs	Focal Subject all-occurrence sampling with random selection of observation times	60 -1 hour observation periods yielding 175 expressive touches	95.7-96% agreement.
Clement (1983)	Any physical contact	Live/ ICU	Focal subject (RS) all-occurrence sampling	225 20-minute observations with 75 patients yielding 9.0 touches/hour	66-100% agreement.
Dahill (1984)	Instrument-al and expressive touch	Live/ three pediatric units	Focal subject (CS) all-occurrence sampling	20 patients observed for one or two 30-minute periods yielding 112 touches	88-100% agreement.
Pepler (1984)	Any Physical contact	Video/ Three nursing homes	Focal subject (CS) all-occurrence sampling during transfers or assistance with other daily activities	41 patients Observed being cared for by 25 nurse aids yielding 512 touch events of which 202 were randomly selected for analysis	Tactile Indication Indicator: percent agreement "high levels;" Touch Message Scale: r=.67=.94.
Probrislo (1984)	Comforting touch	Live/ labor and delivery	Focal subject (CS) all-occurrence sampling	1200 - 30 second observation periods with 10 patients (one hour each) yielding 1701 touches	90% or more agreement in all areas.
Johnson (1984)	Non-proced-ural touch	Live/ pediatric ICU	Focal subject (CS) all-occurrence sampling	47 4-hour observation periods with 13 patients yielding a mean of 6.95 nurse touches per observation period	90% agreement.

Table A.2 (continued)

Author (Year)	Type of Touch Observed	Mode of Observation/ Setting	Sampling Methods	Observational Outcomes	Reliability
Wagnild & Manning (1985)	Procedural and non-procedural touch	Live/ eight long-term care settings	Focal subject (RS) all-occurrence sampling during bathing procedure	42 5- to 8-minute observation periods with 42 patients yielding 42 nonprocedural touches; number of procedural touches not reported	Not reported.
Tulman (1985)	Touch involved in handling infant	Live/ newborn nursery	Focal Subject (CS) one-zero sampling	1620 5-second observations of 36 nursing student/infant dyads; touching patterns described	.82-.90 inter-rater reliability.
Mitchell et al. (1985)	Procedural and non-procedural touch	Live/ pediatric ICU	Focal subject (CS) all-occurrence sampling	1-10 observational periods per child, length of observational periods not reported; observations of 13 children resulted mean nurse nonprocedural touch of 6.73 and procedural touch of 6.8 per observation period	90% agreement for categorizing touch.
Blackburn & Barnard (1985)	Caregiving activity	Video/ pre-term nursery	Focal subject (CS) one-zero sampling	1140 1-minute epochs with 102 infants; caregiving activities occurred 14.4% of 24-hour period	Above .80 intra- and inter-rater reliability.
Porter et al. (1986)	Any physical contact	Live/ setting not reported	Focal subject (RS) all-occurrence sampling	72 40-minute observation periods with two patients; number of touches not reported	Kappa .23-.72; r=.98 (duration of touch).

Table A.2 (continued)

Author (Year)	Type of Touch Observed	Mode of Observation/ Setting	Sampling Methods	Observational Outcomes	Reliability
Le May & Redfern (1987)	Any physical contact	Live/ four geriatric care wards	Focal subject (?S) all-occurrence sampling	318 interactions observed with 30 patients, yielding 1402 touches; length of observation periods not reported	Kappa .25-.98; 52-99% agreement.
Redfern & Le May (1987)	Any physical contact	Live/ ten geriatric care wards	Focal subject (?S) all-occurrence sampling	86 14.25-hour observation periods with 86 patients yielding 2590 touches	Kappa $\geq$ .60 for seven of the schedule components; remaining three unreliable.
Schoenhofer (1989)	Affectional touch	Live/ three ICUs	Focal subject (CS) all-occurrence sequence sampling	30 1-hour observation periods with 30 nurse-patient dyads yielding 84 affectional touches	50-100% agreement.

[a] Use of random or convenience sampling not reported.
[b] Convenience sampling.
[c] Random sampling.

Some studies have included observation of specific nonverbal behaviors other than touch that were exhibited by both nurses and patients. These observations varied in terms of the number and type of nonverbal behaviors taken into account and the level of coding used. Using a checklist of common positions, Le May and Redfern (1987) recorded the body position of both the nurse and patient in each touch episode. Schoenhofer (1989) recorded other supplemental behaviors (e.g., eye contact and vocalization) of the person delivering the touch, as well as the verbal and nonverbal behavior of the patient prior to the touch behavior (coded as direct or indirect). Observers who rated patient response to touch used broad interpretive coding categories (e.g., positive, negative, neutral), with one exception. Pepler (1984) did not include this as part of the observation tool; instead, patients rated their own comfort with the touch on a five-point scale after viewing videotapes of selected touch episodes in which they had been involved. While the inclusion of nonverbal behaviors as a part of the touch gesture is important, the use of broad interpretive coding strategies and lack of attention to the complete range of behaviors in nurse-patient interactions in any one study limits the descriptions provided by these researchers. Data showing the physiological and psychological reactions (e.g., changes in anxiety) associated with touch gestures used by nurses in the natural context of their work were not included in any of these studies.

For the most part, description of the context in which touch occurs has been limited to demographic variables (nurse and patient), patient diagnosis or condition, and type of ward. Only a few researchers have attempted to describe context in greater detail. Pepler (1984) recorded the presence of other people, the availability of clothing and furniture, whether a radio or television was on and the relationship between the patient and the nurse (by identifying the length of time the nurse and patient had known each other), the verbal behavior of the nurse, and so on. Le May and Redfern (1987) included observations related to the task being performed when touch occurred, when the touch occurred during the nurse-patient interaction (approach, interface, separation), and the duration of the nurse-

patient interaction. Greater attention should be given to context, timing, and sequence of behaviors in relation to both nurse and patient in order to increase understanding of touch as a dyadic interaction. A touch from a nurse to a patient does not convey the same message in all circumstances, and simple tabulations of frequencies of the occurrence of touch reveal very little. Lamb (1979) explains that when attempting to answer sophisticated questions about social interaction "it is necessary to take into account the behavior of all the participants, and analyze the actions of every one in the context of each others' behavior" (p. 7). Thus, to determine the differences between positive and negative touch experiences and other important aspects of nurse-patient touch, all components of the touch situation must be examined. To date, the variables involved in nurse-patient touch have not been systematically examined.

Sampling strategies. One problem of observational research involves maximizing the chance of actually observing the behavior of interest in sequences that are representative of the subjects being studied (Sackett, 1978). When short-duration, infrequent behaviors such as expressive touch behaviors are of interest, relatively long time samples have been used to observe these behaviors (Johnson, 1984, Schoenhofer, 1989). Shorter sampling periods have been used effectively to capture frequent or longer types of touches (Probrislo, 1984; Tulman, 1985). In the majority of investigations (12 out of 21 studies), researchers studying nurse-patient touch used a combination of focal subject and all-occurrence sampling methods, varying the number and length of observational periods to meet their purposes. Although the combination of more than one sampling method enhances the efficiency of data collection (Lehner, 1979), some sampling problems are evident in this research. Unbiased sampling was enhanced by some investigators who were able to randomly select subjects, times for observation, place of observation, and/or touches. Nevertheless, much less confidence can be placed in results obtained when the number or length of observations per subject was varied with small convenient samples (e.g., Mitchell, Habermann-Little, Johnson, VanInwegen-Scott, & Tyler, 1985) or when

sampling strategies were not fully reported (e.g., Charlton, 1959; Redfern & Le May, 1987). While truly random sampling is difficult to achieve in field research, attempts should be made to equalize the number and temporal distribution of observations among individuals when the purpose is to describe normative patterns of touch. Furthermore, if the purpose is to describe specific characteristics of touch, attempts should be made to maximize observation of the number of touch episodes of interest during the observational period. In this case, it is important to note that the number of patients or number of hours of observation do not constitute the sample, but rather the sample is the number of touch episodes that are observed. One-zero sampling (often referred to as time sampling) was used effectively in two investigations of handling and caring for infants (Blackburn & Barnard, 1985; Tulman, 1985). When used with a sample period that is sufficiently short in relation to the duration of and interval between behaviors of interest, this method can provide data on frequency, duration, and patterns or sequencing of behaviors. However, when this approach is used with relatively long sample periods (such as those used by Griffin, 1978), a large amount of data on frequency and duration is lost. The fact that few researchers used sequence sampling methods probably reflects the current focus on describing the touch behaviors themselves, rather than the process of touching.

Reliability and Validity. Reliability has been either unreported (especially in early studies) or inconsistently reported. For the most part, researchers have relied on percentage agreement as an estimate of reliability for the nominal data collected to describe nurse-patient touch. However, estimates were sometimes obtained inappropriately. In some cases, estimates were based only on touches seen by both observers (e.g., touches observed by only one of the observers were excluded [Le May & Redfern, 1987]); in other instances, estimates were made from data collected in circumstances that were different from those used in the actual study (e.g., using staged simulations [Schoenhofer, 1989]). In a third case, two observers were involved in estimating inter-rater reliability when three

observers were actually involved in data collection (e.g., El-Kafass, 1982/1983). Intra-rater reliability was estimated in only one study (Blackburn & Barnard, 1985).

The use of percentage agreement has been criticized because estimates can be affected by how agreements are defined (i.e., if agreement on nonoccurrence is included), and because it does not correct for chance agreements (Topf, 1986). In addition, percentage agreement reported on its own (as in the majority of the studies reported here) is not an estimate of reliability unless it is compared with an established standard since all observers could be consistently applying the same incorrect behavioral definitions (Hollenbeck, 1978). The consensus among some behavioral scientists suggests that 70% agreement is necessary, 80% is adequate, and 90% is good (Topf, 1986). However, Topf points out that these values are harder to achieve using occurrence agreement than other percentage agreement formulas. Kappa, a correlational measure of agreement that controls for chance, was used in one series of studies (Le May & Redfern, 1987; Porter et al., 1986; Redfern & Le May, 1987).

The validity of observational tools has received little attention. Researchers have used the literature or have arbitrarily selected variables to guide the development of their observation schedules and, in some cases, have used panels of judges to establish content validity.[1] When using a deductive approach to develop an observational schedule, however, researchers create the risk of focusing on insignificant behavioral sequences or missing a significant phenomenon altogether, thereby presenting a serious threat to validity (Morse & Bottorff, 1990).

Methodological Assumptions and Implications. Observational methods used in the study of touch are based on three assumptions that have direct implications for the study of nurse-patient touch. First, it is assumed that the relative importance of all behaviors is known. However, it is clear that, to date, researchers have tended to overlook subtle

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[1] One exception to this is the Touch Message Scale (Pepler, 1984), which evolved through an inductive process of grounded theory development.

behavioral changes during touch episodes or the complexity of the behavioral patterns in which touch episodes are embedded in the following ways: by restricting their observations to isolated touch behaviors, disregarding changes in other nonverbal behaviors (except to make gross evaluations), ignoring aspects of sequencing, and, using general rather than detailed behavior coding schemes. In other disciplines, researchers studying nonverbal behavior have recognized the need to use a more refined approach to analysis (Knapp, 1983) and to move away from focusing on a single channel of nonverbal behavior (Harrison, 1984; Patterson, 1984; Siegman & Feldstein, 1987). As Patterson and Edinger (1987) explain, examining isolated behaviors may be helpful in building knowledge of nonverbal social behavior, but it contributes little to understanding the coordinated multi-channel reactions that occur in real-life situations.

It has also been assumed that the best level at which to code behaviors is known. Although the types of behaviors to be recorded may vary from study to study, the question of how fine or gross data units should be remains important. For example, in studying nurse-patient interactions involving touch, should one distinguish between a "half smile," "full smile," or "bright-face," or record all of these as instances of a "positive nonverbal behavior"? As Lamb (1979) suggests, either decision carries a risk. By recording nonverbal behavior in relation to a few gross categories, important patterns of interaction can be completely obscured. On the other hand, adopting a highly refined inventory can lead to the identification of a number of distinct behaviors that may be perceived as semantically similar by the participants in the interaction. In addition, it may be difficult to identify a consistent response to behaviors such as "raises eyebrows," where as, if "raises eyebrows," "face brightens," and "raises corners of mouth" are treated as one unit—a smile—the reactant's responses may be more apparent. Lamb (1979) suggests that behavioral units should be roughly equivalent to the unit of meaning; however, this presupposes that the researcher already knows which behaviors are important to the

participants in a touching interaction. Considering the lack of systematic research in relation to nurse-patient touch, this assumption is tenuous at best.

Ethology, which facilitates the systematic observation and analysis of behavior under natural conditions, has been used to study certain aspects of human and animal behavior (Eibl-Eibesfeldt, 1989; Lehner, 1979). Although ethological methods have been used in studies of maternal-infant interaction (Klaus & Kennell, 1976), child behavior (Blurton Jones, 1972), and facial expression (Ekman, Sorenson, & Friesen, 1969), they have not been used to study nurse-patient behaviors or interactions. Ethological methods allow the study of complex behavior patterns at fine levels of detail, characteristically beginning with an inductive descriptive phase to establish "what there is to explain in real-life occurrences" (Blurton Jones, 1972, p. 11). On the basis of this foundation, decisions are made about the significance of behaviors that may answer the research questions of interest. The use of ethological methods to study nurse-patient touch would allow researchers to identify which behaviors are significant and should be observed in touch episodes; observe a wide range of nonverbal behaviors simultaneously, including touch behaviors; capture aspects of timing, sequencing, or other features of the organization of behavior that may be important in understanding nurse patient touch; and identify subtle or rapid changes in behavior associated with touch and touching. By replacing less refined approaches to the study of nurse-patient touch with more sophisticated levels of analysis, it may be possible, for example, to describe the difference between an instrumental touch that is "flavored" with expressive touch and one that is not. Despite this, it may not be necessary or beneficial to conduct all research related to nurse-patient touch by examining molecular units of behavior. Hartup (1979) suggests that the understanding of any social activity could be enhanced by simultaneous study at different levels of analysis. This approach may be fruitful in the development of knowledge on nurse-patient touch.

If more refined approaches to observing nurse-patient touch are pursued, the ability of the observer to record important behaviors reliably must also be considered. Using

videotapes, nurse-patient interaction touch episodes can be rerun and examined at length. Despite the obvious advantages of this approach in observing fleeting touches and the nonverbal behaviors associated with them, Redfern and Le May (1987) caution that the detrimental effects of intrusion and altered behavior in the observed subjects must be considered, as must the loss of depth perception. Less intrusive methods of videotaping, such as, mounting cameras on the wall and using remote control monitoring devices as well as other methods, should be explored in order to increase the ease of recording data. Presently, Redfern and Oliver (Sally J. Redfern, personal communication, October, 1987) are testing the feasibility and reliability of the touch observation schedule (Porter et al., 1986) using a portable lap computer programmed as an event recorder.

Finally, the use of observational approaches includes the assumption that touching interactions are reflected in and can be adequately described by attention to observable behaviors. While many of the behaviors that comprise touching gestures may be observable, the experience of touch and touching is essentially a private one that is influenced by extraneous and interpersonal factors as well as by cultures and systems of thinking; thus, each act of touch is a unique event that reflects the personal experience and judgement of both practitioners and patients (Pratt & Mason, 1981). Consequently, it may not be possible to study touch objectively solely by using an observational approach. Although it has been shown that inferences relating to the emotional or affective states can be made with some degree of certainty from observational data (i.e., facial expressions and other nonverbal behaviors [Ekman & Friesen, 1969; Mehrabian, 1972, 1981; Patterson, 1983]), some aspects of touch and touching, such as understanding the meaning shared by nurses and patients as they experience touch, may not be observable. Following Pepler's (1984) example, it may be necessary to use other qualitative methods (e.g., open-ended interviews) in conjunction with observational methods in order to gain a more complete understanding of touch, that is if nurses and patients are able and willing to share their experiences.

Evaluating the Effects of Nurse-Patient Touch

A number of researchers have attempted to identify the effects of nurse-patient touch encounters, some of which included primarily tactile interventions such as back rubs (Table A.3). It is important to recognize, however, that the literature is biased toward the positive effects of nurse-patient touch. This bias has operated in two ways. First, most investigations have been conducted with populations that would benefit from increased tactile contact rather than with those that might be harmed by it (Weiss, 1986). Second, researchers have tended to look for the positive effects of touch (e.g., decreased anxiety, increased patient satisfaction with care), and their choice of dependent variables and data collection techniques reflects this bias. In studies in which the investigator not only applied the touch intervention, but also later interviewed the patients to determine their response to the touch (McCoy, 1977), the results were biased toward the positive effects of touch because it is unlikely that patients would be willing to give any negative feedback under these circumstances. Yet it is evident from at least one study (e.g., Birch, 1986) that patients may find some touches annoying or irritating.

In studying the effects of nurse-patient touch, investigators have examined developmental responses of infants to tactile stimulation, interpersonal responses of patients to interactions involving touch, psychological responses (including self-image and indices of arousal) to a variety of types of touch, and the influence of touch on well-being and progress in labor. Dependent variables have been measured by a number of means, including investigator-developed questionnaires, standardized questionnaires, interviews, observational measures, and physiological indices. Yet methodological problems associated with a lack of clear or consistent touch interventions, small sample sizes, inadequate attention to the reliability and validity of measurements, and the lack of adequate control of extraneous variables, in addition to the use of a wide variety of settings, patients, and dependent measures, make it difficult to identify areas of coherence among the findings.

Table A.3: Research Describing The Effect of Nurse-Patient Touch

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
INFANT/CHILD STUDIES					
Hasselmeyer (1963)	Handling of infant	Experimental	Preterm infants (1500-2000 g)	Behavioral and physiological measures, feeding patterns	Group receiving high amount of handling in state of "quiescent being" more frequently; passes less feces than control group.
Solkoff et al. (1969)	Gentle rubbing of back, neck, and arms	Experimental	10 low-birth-weight infants (1190-1590 g)	Activity, weight, temperature, startle response, crying, elimination patterns, physical development	Infants who received treatment more active, regained birth weight faster, and described as physically healthier compared to controls
Scarr-Salapatek & Williams (1973)	Special visual, tactile, and kinesthetic stimulation	Experimental (demonstration project)	30 low-birth-weight infants (1300 1800 g)	Infant development, major caretaker characteristics, living conditions	Infants who received treatment showed greater developmental progress at four weeks and greater weight gain than controls.
Solkoff & Matuszak (1975)	Stroking	Experimental	11 low-birth-weight infants (1300-1800 g)	Neonatal Behavioral Assessment Scale (NBSA); weight	Subjects showed more positive changes on NBSA subscales than controls; no difference in weight gain.
White & Labarba (1976)	Rubbing body and gentle flexing	Experimental	Eight low-birth-weight infants (1500-2000 g)	Physiological data, feeding information, weight	Subjects gained weight at a significantly greater rate; ingested more formula than controls.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
INFANT/CHILD STUDIES *continued*					
Kramer et al. (1975)	Gentle non-rhythmic stroking of greatest part of infant's body	Experimental	14 "normal-for-date" premature infants (1800 g or less)	Physical and social development, ability to tolerate stress, weight	Infants who received treatment showed more rapid rate of social development from six weeks after transfer to crib to three months after this transfer, and greater degree of motor skill development at time of transfer to crib than controls.
Triplett & Arneson (1979)	Patting, stroking, holding, rocking to soothe or comfort child	Exploratory, with random assignment to two groups	100 interventions with 63 infants/children	Observation of response to verbal and tactile comforting measures	Verbal and tactile measures more successful in quieting more subjects than use of verbal measures alone.
Rausch (1981)	Rubbing with gentle stroke procedure to all areas of body; gentle flexing	Quasi-experimental	40 premature infants (1000-2000 g)	Weight, stooling, caloric intake	Infants who received treatment showed increased stooling frequency on days 5-10 and increased feeding intake on days 6-10; gained increasingly more weight but not significantly so.
Jay (1982)	Gentle skin to skin contact to head and abdomen of infant	Quasi-experimental	26 mechanically ventilated, short-gestation infants	physiological and behavioral data	Decreased oxygen requirements and higher hematocrit levels were shown for intervention group; infants became more relaxed during touch periods over last five days of intervention.
Johnson (1984)	Hand-holding, stroking of chest and face	Experimental	Four patients in pediatric ICU	Intracranial pressure (ICP)	Mixed results; no ICP changes outside child's resting variability.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
INFANT/CHILD STUDIES *continued*					
Blackburn & Barnard (1985)	Caretaking activities including social stroking	Descriptive	102 premature infants (mean birth weight 1309 g)	Motor activity, type of caretaking activity	Infant activity level higher than baseline levels prior to diapering/feeding and out-of-incubator events; remaining high after some procedures; social stroking showed no relationship to activity levels.
Mitchell et al. (1985)	Spontaneous touch and investigator touch (deliberate stroking to body and face without talking)	Descriptive	13 children with intracranial tension (seven months-seven years); six of the children received investigator touch	Intracranial pressure, arterial blood pressure	Intracranial pressure did not increase or decrease outside range of resting variability of any individual; arterial blood pressure and heart rate remained stable.
CHILD/ADULT STUDIES					
Ellis et al. (1979)	Pulse taking, patting hand or arm	Quasi-experimental	45 patients (18 months to 82 years)	Facial expression, body movement, eye contact, general response	Trend for more positive responses in touch group compared to control.
ADULT STUDIES					
Charlton (1959)	Any physical contact	Descriptive	Psychiatric patients involved in 23 nurse-patient interactions	Description of patient response to physical contact (move toward, away, against nurse)	Patterns of patient movement described in relation to context of nurse-initiated touch.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
ADULT STUDIES *continued*					
Saltenis (1962)	Low and high degree of physical contact	Quasi-experimental	21 primigravida mothers in first stage labor (three-six cm)	Mother's reactions to contractions, BP, pulse	Patients' ability to work effectively with their contractions increased with higher degree of physical contact and dropped when touch withheld; systolic BP and pulse dropped with introduction of touch.
Kaufmann (1964)	Backrub	Quasi-experimental	36 medical patients	Galvanic skin response, BP, pulse, brief interview	Although patient reaction positive, no significant changes in autonomic activity demonstrated.
Aguilera (1967)	Simple appropriate touch gestures	Quasi-experimental	36 psychiatric patients, six nurses	Changes in verbal interaction, patient attitude toward nurse, nurse's attitudes toward subjects	Touch increased verbal interactions, rapport, and approach behavior beginning on eight day.
Greenberg (1972)	Stroking clasping, and embracing	Experimental	10 elderly female psychotic patients	Psychotic behavior	No significant differences.
Slone (1973)	Low (procedural touch) and high touch (procedural touch supplemented with other contacts)	Pilot study, experimental	Eight obstetrical patients	Vocal/nonverbal and physical activity, control of breathing, expressed attitude toward contraction, BP, pulse rate	Only in terms of vocal activity were significant differences found; diastolic BP decreased and pulse rate increased in response to high touch.
McCorkle (1974)	Gentle touch on wrist	Experimental	60 seriously ill patients	Verbal and nonverbal behavior, postinteractive questionnaire, electrocardiograph (ECG)	Touch increased positive responses as measured by facial expression and verbal response.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
ADULT STUDIES *continued*					
Lynch et al. (1974a)	Pulse palpation and holding hand or touching arm with verbal comforting	Case study	Four curarized patients in stock-trauma unit	ECG	Heart rate changes observed during human contact.
Lynch et al. (1974b)	Pulse palpation; measuring BP	Case study	Three critical care unit (CCU) patients	ECG	Heart rate, heart rhythm, and frequency of ectopic beats influenced by human contact.
Thomas et al. (1975)	Interactions with nurse, most of which involved physical contact	Case study	One CCU patient	ECG	Heart rate, ectopic beats influenced by routine interactions that occur in CCU.
Mills et al. (1976)	Pulse palpation	Quasi-experimental	62 CCU patients	ECG	Frequency of ectopic beats increased significantly when pulse taken on patients with low incidence of baseline arrhythmia; no change in average heart rate.
Lynch et al. (1977)	Pulse palpation	Quasi experimental	225 CCU patients	ECG	Significant reductions in ventricular arrhythmias following pulse palpitation in high arrhythmia group; no change in heart rate.
McCoy (1977)	Touch on wrist/arm during assessment interview in emergency department	Quasi-experimental	40 adult patients	Observation of verbal and non-verbal behavior; short interview	Patients who were touched showed positive response and saw nurse as caring.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
ADULT STUDIES *continued*					
Whitcher & Fisher (1979)	Touching hand and arm during preoperative teaching	Experimental	48 elective surgery patients	Affective, evaluative, behavioral, physiological indices	Female subjects who were touched experienced more favorable affective, behavioral, and physiological response than control group; male subjects reacted more negatively then controls.
Copstead (1980)	Any physical contact	Correlational	33 elderly institutionalized patients	Self-appraisal (Second/Jourard Self Cathexis Scale)	Frequency of touch correlated positively with positive self-appraisal.
Sommer (1979/1980)	Reassuring touch in response to expressions of anxiety (touch to arm, forhead, or hand)	Experimental	90 obstetrical subjects (transition phase of labor)	Anxiety (BP, verbal expressions by subject self-report questionnaire	Experimental group less anxious on all three measures than control group
Heidt (1981)	Casual/known touch (pulse-taking) and therapeutic touch	Experimental	90 cardiovascular patients	Anxiety (STAI; patient interview)	Casual touch and no touch group not significantly different in post-treatment anxiety.
Knable (1981)	Hand-holding	Case study	15 ICU patients; 12 nurses	Physiological response, nonverbal behaviors	Positive responses observed in facial expression, body movement, and eye contact during hand-holding; changes in vital signs also observed.
Walleck (1982)	Stroking face and back of hand	Experimental	30 patients with intracranial monitoring device in place	ICP, arterial blood pressure, pulse	Touch lowered ICP in 25 of 30 patients; no significant difference between touching ing face hand.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
ADULT STUDIES *continued*					
Langland & Panicucci (1982)	Touch on forearm with verbal request	Experimental	32 elderly confused female nursing home patients	Attention, verbal response, appropriate action gesture	Increased attention when touch used.
Longworth (1982)	Slow stroke back massage	Exploratory (with repeated measures)	32 healthy female subjects	State Trait Anxiety Inventory (STAI), generalized muscle tension, heart rate, BP, GSR, finger temperature	Significant decrease in STAI; 3-minute massage produced significant increase in systolic BP and 6-minute massage showed a significant increase in mean heart rate.
Lorensen (1983)	High and low degree of physical touch	Pilot study, experimental	12 obstetrical patients	Patient's experience during labor, patient satisfaction, length of labor	Treatment group considered touch to be important during labor, while controls identified nurse talk as important and were more likely to believe that nothing seemed to relieve their discomfort; labor shorter for treatment group.
McCormick (1984)	Back rub using slow strokes	Experimental	30 neuro-otologic surgical patients in intensive care	Anxiety (STAI)	Back rub effective in reducing anxiety for patients with Meniere's disease (chronic) but not for other acute conditions.
Bailey (1984)	"Caring touch" (touches exceeding five seconds to hand, arm, shoulder, etc.)	Field experiment	28 adult patients being treated in emergency	Patient evaluation of nurse	No significant differences in groups on attitudes toward nurse; attitudes not related to number of touch encounters.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
ADULT STUDIES *continued*					
Bramble (1985)	Stationary touch used with routine hospital admission questions	Experimental	50 adult patients	Anxiety (STAI, BP, pulse)	No significant differences although in the touch group a greater number of subjects had a decrease in STAI than in no-touch group.
Guerrero (1985)	Casual touch (taking pulses) and therapeutic touch	Experimental	30 oncology patients	Anxiety (STAI)	Patients in casual touch and therapeutic touch groups showed significantly lower levels of anxiety from baseline mean of trait and state anxiety to post-intervention state anxiety.
Curry (1985)	Intentional nonprocedural touch and procedural touch associated with health examination	Experimental (double-blind)	24 well adult women participating in health maintenance examination	Anxiety (STAI, BP, finger temperature)	No treatment effect (i.e., use of nonprocedural touch) demonstrated.
Birch (1986)	Any physical contact	Descriptive	30 obstetrical patients	Patient perceptions of effects of touch during labor	Touch identified as therapeutic was perceived to have a comforting effect and assisted coping efforts; effects of nontherapeutic touch described irritating/annoying.
Hollinger (1986)	"Hands-on top-of-hands" touch during interview	Experimental (using partial counterbalancing)	Eight female, elderly, hospitalized patients	Duration and frequency of verbal response, length of silence	Touch increased duration and frequency of verbal responses during the time period that touch was applied.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
ADULT STUDIES *continued*					
Glick (1986)	Procedural touch (taking vital sings) and caring touch (holding patient's hand)	Quasi-experimental	33 acute myocardial infarction (MI) patients	State anxiety (STAI)	No significant differences.
Chen (1986/1987)	Expressive (hand-shake) and instrument-al touch (pulse-taking)	Experimental (double blind)	45 CCU patients	Psychological effect of touch, heart rate, ECG	Expressive touch significantly reduced anxiety levels.
Norberg et al. (1986)	Circular stroking movements to face, neck, shoulders, back, arms, hands lower legs, and feet	Case study	Two female Alzheimer patients	Verbal and nonverbal behaviors, heart rate, respirations	No specific behavioral response to touch observed.
Fakouri & Jones (1987)	Slow stroke back massage	Quasi-experimental	18 nursing home patients	Heart rate, skin temperature, BP	Significant changes in physiological indicators of relaxation.
Bauer & Dracup (1987)	Slow stroke back massage	Quasi-experimental	25 coronary ICU patients	Heart rate, BP, muscle tension, skin conductance, skin temperature	No significant differences on any of the dependent variables.
Redfern & Le May (1987)	Any physical contact	Descriptive	66 elderly patients	Patient response to touch (verbal/non-verbal); well-being	No relationship between amount or type of touch and well-being.

Table A.3 (continued)

Author (Year)	Type of Touch	Design	Sample	Outcomes Evaluated	Findings
ADULT STUDIES *continued*					
Henneman (1989)	Holding hand with verbal interaction	Experimental	26 adult patients being weaned from ventilation	Stress (heart rate, BP, respirations)	No significant difference in stress response; respiratory rate increased five minutes after weaning for both groups.
Tough (1989)	Slow stroke back massage	Experimental	21 elderly patients in extended care facility	Anxiety (STAI, pulse, BP, electromyogram readings	No significant differences between back massage group and conversation group on dependent variables.
Marx, Werner & Cohen-Mansfield (1989)	Any physical contact	Descriptive	24 agitated and cognitively impaired nursing home residents	Number and kind of agitated behaviors	Aggressive behaviors were mani fest more often when residents were touched. Nonaggressive behaviors (e.g., repetitious mannerisms) were manifest less frequently when residents were touched.

One area, the effects of nurse-patient touch on anxiety, has received a substantial amount of attention; nevertheless, the findings are conflicting. The use of diverse (and often multiple) methods of measurement across a variety of settings has provided evidence that touch can produce anxiety (Whitcher & Fisher, 1979), decrease anxiety (Chen, 1986/1987; Fakouri & Jones, 1987; Guerrero, 1985; McCormick, 1984; Sommer, 1979/1980), or have no effect at all (Bauer & Dracup, 1987; Bramble, 1985; Curry, 1985; Glick, 1986; Heidt, 1981; Kaufmann, 1964; Tough, 1989). Even investigators that have used similar physiological measures (Knable, 1981; Lynch, Flaherty, Emrich, Mills, & Katcher, 1974; Lynch, Thomas, Mills, Malinow, & Katcher, 1974; Lynch, Thomas, Paskewitz, Katcher, & Weir, 1977; Mills, Thomas, Lynch, & Katcher, 1976) have reported inconclusive results or no effects (Henneman, 1989; Whitcher & Fisher, 1979). While identifiable differences in anxiety may be diminished as a result of the large variability in physiological indicators that exists both between and within individuals (Tough, 1989), other factors must be considered. The meaning of touch may change when it is used in different contexts, which may explain the variation in responses reflected in these findings and negate the underlying assumption made by investigators that all types of touch have similar meanings (Weiss, 1988). In addition, the mere presence of a supportive individual may relieve symptoms of anxiety and decrease arousal (Sivadon, 1969). In most studies, touch was administered while conversing with the patient. Thus, the results of these investigations of nurse-patient touch may be confounded by the effect of simply having someone to talk to (or someone close by); this extraneous variable was controlled by only two investigators (Chen, 1986/1987; Tough, 1989).

Inadequate control of other forms of communication that may be part of or associated with the touch gesture (e.g., eye contact, tone of voice, body position, purpose of the interaction) may influence outcomes and explain inconclusive findings. In many instances, the investigator presented the touch gesture and interacted with the control group. Thus, it may be incorrect to conclude that differences between the outcomes of experimental and

control groups are the result of the touch intervention. For example, in replicating a study by Boderman, Freed, and Kinnucan (1972), Breed and Ricci (1973), showed that when the accomplice's behavior and touch gestures were controlled no effect was created by touch. Preference for future interaction with the accomplice was significantly affected by the accomplice's behavior (i.e., being "warm" or "cold") rather than by the use of touch. The possibility that a researcher who has a vested interest in the positive effects of touch may be more warm and friendly in touch conditions than in the no-touch conditions has been ignored by those investigating nurse-patient touch. Future research would profit by controlling for the influence of important nonverbal behaviors and different types of touch (e.g., interested versus disinterested).

The majority of researchers who have studied the effects of nurse-patient touch have used deductive approaches and thus have assumed that the effects of touch can be predicted and measured on the basis of existing theory. This assumption has been challenged by those who believe that the poor understanding of the concept of touch is one of the most salient problems associated with this approach to research (Estabrooks, 1987a; Jones & Yarbrough, 1985; Weiss, 1979, 1986). Estabrooks (1987a) suggests that most investigators have designed studies without critically reflecting on the question, "What is touch?" If the most important aspects of touch have been predetermined on the basis of previous work done in different contexts, it is not surprising that the resulting research has not contributed meaningfully to our understanding of nurse-patient touch. In addition, the use of experimental designs is based on the assumption that contrived touch interventions (which were often brief, almost unnoticeable touches) initiated by a nurse in a controlled fashion will increase the understanding of the effects of touch. The use of such designs fails to consider the interactive, reciprocal nature of interpersonal communication, and the continuous feedback and readjustment that characterize dyadic communication, including communication through the use of touch. When a stranger (who for the most part has been

the researcher) enacts the touch intervention, touching gestures and the associated effects that are characteristic of relationships at various stages of intimacy are not addressed.

Descriptions of nurse-patient touch in the context in which it occurs, including descriptions of hitherto unnoticed but associated nonverbal and verbal behavior patterns, would help to show which aspects of touching behavior determine impressions of the meaning of touch and would increase our ability to test interpretations and examine behavior with more subtlety (Blurton Jones & Woodson, 1979). In addition, paying more attention to the perceptions of those who touch and are touched may assist in determining which effects of touch should be addressed. Therefore, if researchers are willing to accept the trade-off between maintaining a certain level of control and choosing a method that is appropriate to the model under investigation (Seigman & Feldstein, 1987), the use of descriptive, naturalistic methods may help capture the interactive nature of touching behaviors and their effect.

In summary, while nurses' clinical reports of the effects of touch in practice suggest that touch may be a powerful therapeutic tool (Amacher, 1973; Bean, 1980; Bledsoe, 1984; Burnside, 1973; De Thomaso, 1971; Preston, 1973; Seaman, 1982; Waddell, 1979; Zefron, 1975), and patients' accounts of the need for and effects of touch are often dramatic (Colton, 1983; Huss, 1977; McGuire, 1983; Older, 1982; Pratt & Mason, 1981), systematic investigation has yet to demonstrate these effects with any degree of consistency.

Conclusion

This review of the literature reinforces the fact that little is known with certainty about nurse-patient touch. The lack of definitive findings in this field is due to the influence of unsubstantiated *a priori* assumptions that underlie the predominantly deductive approaches used to investigate touch, the lack of attention to the meaning of touch and context (which are central to the understanding of touch), methodological problems, and problems associated with the definition of touch. Because understanding and documentation of the

effects of therapeutic interventions are vital to improvements in caring in nursing practice, changes are needed in the approaches used in the research of touch; in particular, increased use of the inductive approach is crucial to development of a more complete understanding of touch. Such approaches would help to identify the nurses' and patients' behaviors that may be important for study (rather than deciding this *a priori*), permit exploration of the experience of touching and being touched from the perspective of the nurse and the patient, and allow consideration of the important factors of context and relationship. The findings of inductive research on these and other dimensions of touch could contribute significantly to the development of the adequate theoretical and operational definitions of nurse-patient touch that are needed to provide a basis for more productive deductive work.

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APPENDIX B

PATIENT INFORMATION RECORD

Patient Information Record

Patient No: _____

Demographic Data:

Age: _____ Sex: _____ Marital Status: _____

Occupation: _____

Information Related to Hospitalization:

Date of Admission _____

Patient's stated reason for admission _____

Number of previous hospital admissions (for any reason) _____

Number of previous admissions to Station 40 _____ If so, length of stay _____(days)

Diagnosis _____

Nursing Care Plan as formulated at admission:

Medical Treatments (e.g., RT, chemotherapy, other medications etc.)

Analgesics (as prescribed at admission)

Details of Observations

Date data collection begins _____

Date data collection completed _____

Times and dates of all observations:

APPENDIX C

OBSERVATIONAL SCHEDULE

OBSERVATIONAL SCHEDULE

General Rules

1. Code 0 will be reserved for none of a category or the equivalent of none.
2. Codes ending in 9 in each category will be reserved for miscellaneous behaviours of the category or dimension. Comments will be made when 9s are coded.
3. Qualifying codes will be used in some categories (e.g., 1, 2) and entered immediately after the number code. This strategy effectively reduces the number of codes that are necessary.
4. If two nurses are in the room, only code the primary nurse, i.e., the one with the most contact with the patient or the nurse directing the care.
5. If the cameras are turned off or the nurse is off the screen (e.g., in bathroom) use "0" to indicate that relevant categories cannot be determined.

Procedure for Coding

1. Run tape forward to delimit section to be coded (i.e., identifying parameters of types of attending). Mark on the transcript the time of commencement and time of completion of each type of attending (from entry to exit of nurse). Note all touch events on the transcript. Highlight changes in dialogue, including periods of silence, on the transcript.
2. Run through the interaction again to code in detail only those units of attending that include touch incidents using continuous coding. Use the pause and/or slow motion features of the VCR to identify exact time of behaviour changes for data entry.
3. Use slow motion to code characteristics of each touch event and determine onset and offset times. Be sure to also view touch in real time to check on form and intensity.

Summary of Coding Categories

1. Identifying Codes

2. Nurse Categories
   a) Type/Intensity of Attending
   b) Proximity to Patient
   c) Nurse-patient dialogue
   d) Nurse activity
   f) Eye Gaze

3. Patient Categories
   a) Patient Condition
   b) Others in room

4. Touch Categories
   a) Initiator
   b) Location of Touch
   c) Form of Touch
   d) Intensity
   e) Verbal comment
   f) Type of touch
   g) Duration

IDENTIFICATION FILE

Patient Code: [1 to 8]
Patient Sex:
1. Female
2. Male

Tape Number:

Type of Caregiver:
1. Nurse-female
2. Nurse-male
3. Nursing assistant-female
4. Orderly-male
5. Student nurse
9. Other-specify

Personnel Code:
Rules: Each regular staff member will have a particular number. Casual staff and students will not be identified in this way.

Time:
Record hours, minutes, seconds on videotape (use 24 hour clock)

Observer Code:

OBSERVATION FILE

Interaction Number:

Time (24 hour clock): Hours, minutes, seconds

Phase of Interaction:
1. Enters
2. Interface
3. Exit

FIRST PASS THROUGH DATA

I. TYPE/INTENSITY OF ATTENDING (Nurse-focused)

0. Nil: Unobservable or nurse and patient out of camera range. Enter reasons as a comment.
1. Doing More (making contact): A type of attending in which the nurse does something *more* than is usually required and in doing so becomes engaged with the patient. The nurse may be physically closer than is usually required or take more time that is usually required. One or the other is necessary to attain the level of engagement necessary for this type of attending. This type of attending can occur with or without a task (ADL or treatment) and is characterized by a focus on the patient (as person) which is intense. This attention provides the patient with an opportunity to self-disclose if they wish (although these may not be deep secrets). When the proximity between nurse and patient is close, there is an opportunity for more touch contacts than would otherwise occur. This kind

of attending is frequently, but not always, associated with patient distress or discomfort. This type of attending is also characterized by concerned acknowledgement of patient concerns and symptoms and attempts to understand the patient's experience in order to provide more appropriate care. Attending interactions of this type may be brief.

Essential characteristics: Gets job done, nurse friendly, patient involved, does something extra

2. Doing For (obliging, accommodating requests/needs): A type of attending in which the nurse is primarily occupied by responding to patient requests and perceived needs that are not treatment related (i.e., ADL). This type of attending is characterized by a personalized approach to assist and do for. Often involves the "extras" which can take up a nurse's time. However, usually no more time than necessary to complete the task is spent. The nurse acts in a pleasant, considerate, and personal manner to please the patient, and this assistance is usually appreciated. These activities may lead to interactions in which the nurse attempts to understand the patient's personal experience of this illness/treatment, but these interactions are not part of "doing for." The patient is given opportunity to direct care, e.g., "Is there anything else I can get you?"

   Essential characteristics: Gets job done, nurse friendly, not applicable to treatments

3. Doing With (attentive, cooperative nursing): A type of attending in which the nurse focuses equally on the task/activity (treatment or ADL) and the patient. This type of attending is characterized by a willingness to work cooperatively with patients. For example, the nurse may actively engage the patient by seeking or attending to his/her opinions, thoughts, perceptions, or assistance in relation to an activity/task. This type of attending does not necessarily involve more time with the patient as patient is engaged while the activity is going on. The nurse often uses eye gaze to focus on patient and reinforce interest in patient; however, gaze may be broken to attend to activity/task. The patient is alert and able to cooperate in some way. The nurse is friendly, tone of voice conversational or concerned.

   Essential characteristics: Gets job done, nurse friendly, patient involved/cooperating

4. Doing Tasks (attentive to routine checks/care, distancing): A type of attending in which the nurse focuses on equipment, treatment, and getting the job done rather than the patient. This type of attending is characterized by an indifferent, apathetic, or routinized approach. The nurse appears to be preoccupied with task at hand or other commitments (e.g., charting, other patients, going off shift). There is little or no attempt to engage the patient; in fact, patient comments or concerns may be ignored in an attempt to remain focused on the task. The nurse speaks in a rote, uninterested, absent-minded way to the patient or talks to his-/herself, the machines or another nurse (i.e., without including the patient). This type of attending is often characterized by no eye gaze or only brief glances. The nurse may appear hurried as time spent with patient is determined by the length of time required to do the task.

   Essential characteristics: Gets job done

9. Other: *Specify

Rules:
The minimum length of time for a type of attending is **30 seconds**. Unless there is a definite break between types of attending that needs to be preserved, round off to the nearest 10 seconds or if inappropriate (e.g., if this runs into the next touch) round to the nearest 5. If the type of attending appears to change but is not of sufficient length to code it as a separate unit, continue with the code for the previous type of attending. If the interaction begins with a type of attending that is less than 30 seconds and it is clearly different from the rest of the interaction and using this type to code the majority of the interaction would be inappropriate, an exception may be made to the 30 second rule.

SECOND PASS THROUGH DATA

II. PROXIMITY TO PATIENT (1 sitting)

0. Unable to determine, or nurse or patient moving.
1. Intimate Zone, Close: Less than 1 foot apart, nurse always leaning toward patient, or so close to the patient that there is a lot of body contact. Head, thighs, and trunk may be in contact. Accidental touch is common. Hands can reach and manipulate any part of trunk easily due to close proximity. This position is used with transfers, sometimes when assisting with bathing, and so on. When the nurse is sitting on the side of the bed and the patient is in bed, he/she is in this zone.
2. Intimate Zone, Not close: 1 to 1.5 feet away. Nurse is standing right next to the bed (such that her body is in contact with the bed or inches away) with or without body lean or is standing close to a patient in a chair with or without body lean. Accidental touching is frequent in this zone. One can ***easily*** reach out and grasp an extremity, i.e., it does not require full extension of the arm. Within arm's length of trunk of body. This position is often used when talking to a patient (if the nurse stands right beside the edge of the bed or chair), taking a BP, or checking IV sites on the patient's arm.
3. Personal Zone: 2 to 4 feet, from just outside touching distance to trunk if arm extended to distance where by reaching out one can just touch the other's trunk. Situations included here: nurse standing near but not within inches of the bed, beside the lower half of the bed, or at the foot of bed. Sometimes nurse may be standing behind the bedside table.
4. Social/Public Zone: 4 or more feet (unable to touch patient from this proximity from any kind of reach). The nurse and patient may be on opposite sides of the room or at such a distance from each other that it is difficult to get both the nurse and patient on screen. A nurse who obviously leans away from the patient (although if she was standing facing the patient is in a zone 3) may put herself in zone 4 (e.g., when the nurse leans over bed to get medications while the patient sits by the window).

Rules:
Code for proximity when the nurse and patient are in stationary positions for longer than **5 seconds**. When nurse walks into the room, code 0 until the nurse takes a stationary position for more than 5 seconds. When the nurse moves, e.g., moving in from personal-close zone to intimate-close zone, code 3 until the nurse resumes a stationary position, then code 1. If the nurse is in zone 2 and moves away to put something in the garbage and does not stop (for more than five seconds) and returns to a stationary position at a code 2, simply continue the code 2 through this

entire period as the nurse has not resumed a different stationary position for 5 seconds or more. When the nurse is leaving and moves out of the the last recorded zone, as long as she continues to move, the last stationary zone is the code used. When the nurse moves off camera for 5 seconds or more, this should be coded as 0. If the type of attending changes and detailed coding was not required in the previous type of attending and the nurse is moving, code 0 until the nurse takes a stationary position.

If nurse is stationary and patient is moving, treat this situation the same as if the nurse is moving—i.e., a code cannot be established until stationary positions in relation to one another are in effect for 5 or more seconds. Until stationary positions are assumed, use the appropriate previous code or 0.

In determining proximity, it is the distance between the trunks that is important. Movement of the nurse's head with the rest of the body remaining stationary does not justify a change in proximity.

EXTRA CODE:
If the nurse is sitting on the patient's bed and the patient is in the bed, add a "1" in combination with the intimate-close category. This will indicate a different form of intimate-close.

III. NURSE-PATIENT DIALOGUE

0. Unable to determine/observe/hear.
1. Silence (nothing happening—no talking or listening to patient talk). This must be longer than 5 seconds to be coded as silence. Periods of silence may need to be coded for shorter durations (e.g., at the beginning of a type of attending when dialogue has not yet begun). If a short period of silence occurs that is less than 5 seconds (i.e., a pause), assume the previous type of talk continues until the next change.

Non-social

2. Conversation for purpose of emotional support: Nurse/patient verbal and nonverbal behaviours intended to provide encouragement, reassurance, understanding, support, and/or sympathy. Includes self-disclosure by the nurse when relevant to patient concerns, listening to patient concerns (e.g., as evidenced by use of verbal reinforcers, head nods), and the use of reflection for the purpose of validation. Tone of voice is concerned/intimate or conversational. This kind of talk can be initiated by the nurse or the patient.
3. Care Talk: Conversation is focused on assessing symptoms or effect of treatments and includes questions about abilities, comfort preferences, and/or knowledge level. Also includes giving and receiving information related to perceptions of well-being, the disease, treatment, medications, ADL, hospitalization, and/or when to expect the nurse back. Includes teaching, giving explanations, informing about treatments, giving directions, making suggestions, seeking permission or cooperation with treatment, or otherwise responding to patient requests. Tone of voice is conversational. This kind of talk is nurse or patient initiated. If care talk is of a teasing nature, it should be coded as 5.
4. Self-Talk: The nurse or patient talks to self or to machines. Conversation not directed to anyone in particular. Nurse or patient does not listen to the other, ignoring his/her comments or questions. Conversational tone.

Social

5. Social Talk: Nurse and patient discussions regarding topics such as the weather, crafts, hobbies, and so forth. Includes teasing and self-disclosures about common interests or neutral issues. Teasing may also be related to care, treatment, or attention being given by the nurse. Verbal reinforcers may also be used in this context. This kind of talk may be initiated by the nurse or the patient. Includes communicating arrival and departure, such as "hello," "good-bye," "see you in a bit," "see you later," and "how are you?" (when used as a pleasantry).

9. Other : *Specify (e.g., talk about cameras)

Rules:

The talk of interest here is between nurses and patients. If the nurse's or patient's talk is directed toward someone else (e.g., another nurse or another person in the room), use code 9.

IV. TASK/ACTIVITY OF NURSE

0. Unable to determine/observe.

Non-ADL Activities

1. Adjusting environment: Includes activities such as pulling up a blanket, fixing furniture, turning on lights, and/or placing commode or other furniture for easy access.
2. Checking and watching patient: Includes activities primarily associated with assessment and monitoring patient status, such as vital signs, input and output, checking on symptoms (e.g., pain, nausea, sleeplessness, fatigue), leaning about the patient's medical/health history, and so forth. Although the nurse may be checking on the patient as other tasks are being completed (e.g., watching patient as he/she changes dressing), for this category to be coded, the nurse's checking action must be verbalized or clearly evident from what he/she is doing (e.g. taking vital signs). Does not include checking machines or equipment. Checking IV or SC sites is coded as #5. Checking wounds is code under #6.
3. Giving medications (includes enteral feeding and inhalation therapy): Activities associated with giving medications, including waking patient for medications, checking name bands, hooking up IV tubings to run IV medications, putting up new IV medications, and informing patients about medications. Negotiations about same are also included here.
4. Non-pharmacologic symptom management: Includes activities related to use of hot packs, cold clothes, extra blankets (e.g., if patient cold), rubbing SC site, and using fans. Negotiations about same are also included here.
5. Starting and maintaining IV, SC, and GT sites: Activities associated with starting sites, checking sites, fixing sites or tubing, heparin locks, and maintaining infusion pumps.
6. Caring for Skin: Activities related to managing skin integrity, wounds, and drainage devices. Includes massaging (e.g., back rub, applying powder), dressing changes, checking wounds and tubes, and setting up for dressings. Negotiations about same are also included here.

ADL Activities

7. Assisting with dressing, grooming, toileting: Includes a range of helping activities such as bathing, dressing, combing hair, and/or shaving. Participation of the patient in these activities may vary. Negotiations about same are also included here.
8. Assisting and supporting movement: Activities associated with transfers, altering position, and mobilization. Includes turning up head of bed. Negotiations about same are also included here.

10. Providing environment for leisure activities: Includes activities related to helping patient organize environment for reading, knitting, TV, visiting,and so forth. Includes nurses' attempts not to interrupt patient activity if patient appears engaged in these activities. Negotiations about same are also included here.
11. Approach: The **first** activity of the nurse is always approach. If the nurse almost leaves but does not, the approach code is not used again. Exceptions may occur if cameras have been off.
12. Departure: The **last** activity of the nurse is always departure. If the nurse almost leaves but does not, the departure code is not used. Exceptions may occur if cameras were turned off before the interaction was over.
13. Visiting: The nurse is not involved in any other activity except talking and listening to the patient about social or non-care related issues.
19. Other: *Specify (e.g., visiting).

Rules:
If the nurse appears to be doing one activity and before it is completed she/he switches to another activity (e.g., the nurse is giving a "break through" analgesic and stops for a moment to assess a new site by palpating the chest before completing the administration of the analgesic), the switch in activity should be coded as such—in the example given, the first activity is coded as 3, and the second is coded as 5. The start and stop of these activities should be determined first on the basis of the physical activity of the nurse (i.e., what her hands are doing) rather than the verbal dialogue.

If there is not a clear break between one activity and the next (i.e., a period of transition), use the code for the first activity until a definite change in activity can be identified.

If the nurse is off camera for 5 seconds or more, code 0 for activity.

V. EYE GAZE

0. Unable to determine.
1. Prolonged direct eye gaze toward patient's face (five or more seconds): Use this code when it is possible to observe the nurse's face or at least half of it and it is possible to see that the nurse is clearly looking in the direction of the patient's face. Gaze is clearly evident.
2. Suspected/inferred eye gaze (of five or more seconds): Use this code when the nurse's face is not clearly visible (e.g., due to camera angle or position of nurse and it is only possible to observe the back of her head), but on the basis of head movements or head position, it seems likely that the nurse is looking in the direction of the patient's face. If the nurse's face is obscured by hair or other body parts (including the patient's body), use this code if there is sufficient evidence that gaze is likely taking place. Otherwise assume that there is no eye gaze or brief glances (i.e., code 3).
3. Brief glances or no eye gaze: Use this code when eye gaze is less than five seconds or no eye gaze is occurring. This can be inferred or observed directly.

VI. PATIENT CONDITION—Type/Level of comfort

0. Unable to determine/observe.

Uncomfortable (Physcial/pscyhological Discomfort)

1. Enduring physical pain and/or distress: Verbal or behavioral indicators of discomfort or physical distress are evident. This includes physical symptoms such as pain, soreness, SOB, nausea, and vomiting. If the patient has just requested analgesic and is lying still, code in this category.
2. Enduring emotional pain/distress: Verbal or behavioral indicators of psychological or emotional distress. This includes patient verbalizations of worry, concern, uncertainty, lack of self-efficacy as well as indicators such as crying and moaning.

Comfortable (Physcial and Pscyhological)

3. No apparent distress: Patient is awake, observant, attending, and/or focused. There are no apparent verbal or nonverbal indicators of physical or psychological distress. Patients may verbally indicate they are comfortable.
4. No apparent distress: Patient is resting with eyes closed. There are no apparent verbal or nonverbal indicators of physical or psychological distress. The patient may or may not be sleeping.
9. Other: *Specify.

Rules:
Use hierarchical coding. That is, although it is possible for some behaviours to occur simultaneously, the rules for coding are that the behaviour in the preeminent category is coded in preference to the behaviour in the category that is lower in the hierarchy. For example, psychological distress almost always accompanies physical pain. However, psychological distress may occur in the absence of physical distress. Therefore, it is appropriate to order physical distress higher than psychological distress.

VI. Others in Room

0. Unable to determine.
1. No one else in room.
2. Visitor(s) in room.
3. Other nursing staff in room.
9. Other *Specify.

Rules:
If others are not on camera and you cannot hear them talking, assume they are not in the room. Checking the log may also help you determine this.

TOUCH BEHAVIOURS

I. INCIDENCE OF TOUCH

1. Unscorable or no touch
2. Physical contact

Rules:
Touch is defined as the physical contact between a caregiver and a patient, initiated by either, skin-to-skin or through bed clothing, dressings, or personal clothing. Contact with tweezers (e.g., when nurse swabs skin holding gauze in tweezers), with temperature probes (either in ear or in mouth), or movement of dressings or gauze over the skin are not considered as touch incidents.

A touch event is scorable if it is:
a) totally visible or
b) if body contact is CLEARLY evident, although partially hidden by a part of the caregiver's body or patient's body. If contact is not absolutely evident but it is suspected that a touch has occurred (e.g., in passing medicine cups, pulling down T-shirts, or adjusting clothing), the touch is not clearly evident and, therefore, must be considered not scorable. If you have to ask yourself if a touch is occurring, consider that it is probably not scorable, although it may still in fact be occurring. Even though you know a touch is occurring (e.g., rubbing a patient's back or taking a pulse) and the view is obscured by the position of the nurse/patient or poor lighting, the touch is not scorable.

A touch begins with the moment of contact and ends with a definite break in contact that is longer than 1 second **or** with change in the form of touch (e.g., if touch changes from a pat to a squeeze without a break in contact and last longer than one second) **or** when the touch becomes obscured by the position of the nurse or the patient.

If a change in form occurs in less than one second and the touch only lasts one second, code the touch with the first form that was observed. If the touch commences at the very end of a second mark, code the beginning of the touch in the next second. If one touch stops and the hand lifts and clearly a different touch occurs in the same second, then simply code the second touch as starting in that second (this will also mean the previous touch has stopped).

If a rapid series of brief touches of the same form occur (e.g., pats), consider this as one touch.

If simultaneous touches occur and the action is bilateral (i.e., the same on both sides) this will be counted as one touch event. If simultaneous touches occur and involves two parts of the caregiver's body in different actions, this should be considered as two touch events.

II. INITIATOR (who touches who?)
   0. Unable to determine: e.g., when the commencement of the touch has not been observed (i.e., it has occurred off camera or when cameras are off) or is not clearly seen.
   1. Caregiver touches patient.
   2. Patient touches nurse.
   3. Mutual (as in accidental collisions, bumping, taking pills, etc.).
   4. Simultaneous combinations: Nurse initiated and patient initiated touch (e.g., when the nurse is palpating the abdomen and the patient taps her on the arm as a tease) or nurse initiated working touch occurring together with accidental bumping.

III. LOCATION OF TOUCH [use 0-1 coding]

a) The person who touches (actor) uses these parts of body to touch, identifying left, right or both:

Unable to determine
fingers, fingertips
palm/back of hand
arm
trunk
other
Gloves (code 1 if gloves are used)

Rules:
If touch involves more than one part of the body, identify each. If initiator of touch cannot be determined or touch is mutual, assume that it is the caregiver.

b) Recipient is touched on these parts of body [use 0-1 coding]:

Unable to determine
face (including forehead)
head
neck
fingers/fingertips
palm/back of hand
forearm
elbow
upper arm
shoulder
upper trunk (chest, back-above midline
lower trunk (abdomen, lower back-below midline)
thigh
knee
lower leg
foot, toes
Other

Rule:
If touch involves more than one part of the body, identify each. If the recipient of the touch cannot be determined or the touch is mutual, assume that it is the patient.

IV. FORM OF TOUCH

0. Cannot determine.
1. Non-moving: Placement of the hand on the body surface, remaining in one position (i.e., inactive). No obvious force is applied, as in resting or placing a hand on the patient's knee. The hand or fingers are flat and <u>not</u> encircling a body part, either whole or in part. If contact is less than one second, consider that the strike category may be more appropriate. Variations:
    Pointing touch (weak intensity)
    Resting-placing (weak intensity)
2. Pressing: Placement of a part or all of the hand in any posture in continuous contact the surface of the body while applying varied amounts of force. No observable movement is made on the body surface. For example, the nurse may press a dressing down. Nurse may also press her body against the patient's body to offer support. Intensity is always at least moderate and may be firm. Variations:

Press (always at least moderate, but may be firm)
Pushing (e.g., helping patient sit up) (firm intensity).
Guiding (medium intensity)

3. Palpating: Movement of the hand over the body surface in a repetitive intermittent contact and/or a continuous contact while alternating areas of the hand apply force for the purpose of assessment. Includes a combination of several forms of touch—pressing and rubbing. The whole or a part of the palmer surface and/or fingers contacts the body surface. Variations of the action include:
   Feeling (weak intensity)
   Palpating (moderate or firm intensity)
   Poking (moderate or firm intensity)
4. Rubbing: Movement of any part of the hand except the fingernails, in either a unidirectional, circular, or back and forth motion. Movement occurs in varied rates, and varied amounts of force are applied. Variations include:
   Smoothing (e.g., with tape) (weak intensity)
   Stroking, brushing (weak intensity)
   Wiping, swabbing (weak intensity)
   Washing-wiping (moderate intensity)
   Massaging (moderate or firm intensity)
   Rubbing back (moderate or firm intensity)
   Rubbing legs through bedclothes (moderate intensity)
5. Holding/Grasping: Partial or complete encirclement of a body part by the hand (with the fingers and thumb working together) or the arm with varying amounts of force. No visible movement is made on the surface of the body part being held. There may be movement on the surface of the body as the hold is applied and withdrawn—this is part of the holding action and should not be coded as a rub. Variations include:
   Holding (as in pulse taking)—If supporting or bearing the weight of an extremity, moderate intensity. If arm already supported on the bed when pulse is taken, light intensity.
   Supporting (moderate to firm)
   Squeezing, grip (firm intensity)
6. Striking: Usually a single or repetitive momentary contact of a part or all of the hand in any posture with the surface of the body applying varied amounts of force at the time of contact. There is usually a faster rate of approach (i.e., velocity) to this form of touch than the non-moving touch. Even if the contact is short, if the rate of approach is slow, the non-moving touch is the form that would be more appropriate to code. View the tape in real time to assess the rate of approach. This form also includes accidental bumping of various body parts when two people are in close proximity. Variations of this action include:
   Bumping (weak intensity)
   Tapping, patting (weak or moderate intensity)
   Putting down lightly as in dressings if rate of approach rapid (weak intensity)
   Hitting (firm intensity)
7. Wrapping: Movement of both hands over a body extremity in a repetitive, intermittent contact and/or a continuous contact with alternating areas of the hands while encircling the extremity with an apparatus such as a BP cuff or dressings. A combination of movements are required which include holding, grasping, and rubbing. Other contacts that may occur during a wrapping episode such as tucking arm under nurse's arm while putting on BP cuff and accidental bumping of hands and arms must be coded separately using their respective codes. The intensity may vary depending on the purpose of the

wrapping, for example, wrapping a BP cuff on a patient's arm usually involves firm intensity, whereas wrapping a dressing on an arm may involve moderate or light intensities.

9. Other: *Specify.

Rules:

If the form of the touch changes without an interruption of touch and each form occurs for longer than one second, consider each as a separate touch event.

If only the location of the touch changes or more than one part of body of the initiator becomes involved (e.g., rubbing leg from thigh to knee to lower leg or if the nurse changes from one hand rubbing to two hands rubbing), this is all one touch event.

If a series of similar touches occurs such that the break between them is of less than one second (i.e., you would be recording the same touch second after second), this can all be coded as one touch event.

V. INTENSITY OF TOUCH (PRESSURE, INDENTATION)

0. Unable to determine/observe.
1. Weak: A light contact with little or no force and little or no indentation of the skin. Often associated with touch forms such as a brush, pat, stroke (e.g., when checking IV site), or bump.
2. Moderate: A moderate contact with some force and indentation of the skin. Often associated with touch forms such as holding, supporting, massaging (or lighter back rubs), less than vigorous rubbing (e.g., rubbing skin while giving SC medications), and/or some forms of palpating, pulse taking, and placing one's hand on the patient's arm or knee (e.g., if the nurse is applying some force by the fact that she is leaning toward the patient).
3. Firm: A more forceful contact than those above, with maximum indentation of the skin. Often associated with touch forms such as grasping, squeezing, vigorous palpating, intense rubbing motions, putting on BP cuff, and holding and supporting during a transfer. If prolonged, this touch may be associated with some discomfort. If brief, as in a firm handshake or firm grasp when being assisted, it may be welcomed.

VI. TOUCHER'S ACCOMPANYING VERBAL COMMENT

0. Unable to determine/cannot hear.
1. No talk by toucher: If there is no comment (i.e., silence) by the initiator of the touch during the **whole** touch event, code 1. Brief comments such as "yeah" or "hum" do not count. The patient (i.e., receiver of the touch), however, may be talking.
2. Talk related to touch: Touch is related to the toucher's comments if it appears to punctuate or reinforce what is being said as well as if touch comprises the topic of conversation, *even if the talk does not continue through the whole touch event*. For example, if the nurse is touching to hook up the G-tube and talks about the feedings to be given or about the hook-up, this would be coded as 2. If the nurse taps the patient's shoulder as he/she discusses bathing and says "the rest of you," the touch reinforces his verbal statement. Verbal comments may be less directly related to the touch. However, to use this code, the touch must reinforce, punctuate, or enhance the verbal message. If the nurse says, "I'll let you relax" as he/she places her hand on the patient's arm (i.e., a comforting touch to calm), this would be coded as 2. Other examples where this code would be used include: The nurse squeezes the patient's foot and says, "Alright,

I'll let you get some rest." The nurse taps the patient's shoulder as he/she teases the patient, or the nurse touches the patient on the arm as he/she asks about the patient's pain.

3. Talk unrelated to touch: Touch is not related to the toucher's comments in situations such as one in which the nurse is doing a back rub and talks about his/her experience in nursing, the weather, and so forth. When the nurse is putting on the patient's stock after checking his/her foot and says to patient, "Is that the only one that hurts?" this code would not be used. In this example, the talk is not related to putting on the sock.
4. Talk is related to one of two types of touch occurring simultaneously.

VII. TYPE OF TOUCH

0. Unable to determine: This code might be used when the initiation of the touch has not been observed and it is not possible to determine the purpose of the touching.
1. Comforting touch: A touch that is given for the purpose of providing comfort. The touch has the effect of calming, soothing, quieting, bolstering spirits, reassuring, and encouraging. Examples include stroking, holding hands, or placing hand on hand. May be used alone or in combination with a task. The patient often is, but not always, in some degree of distress. *If touch appears to have an element of calming or soothing, it should be coded as comforting.*
2. Connecting Touch: A touch used primarily for the purpose of connecting with or reinforcing a connection with a patient to communicate that the nurse is there and interested. The patient is usually not in distress. The touch is given in the context of nurse and patient being on a more equal footing. Examples include putting a hand on the patient's knee when the nurse is talking to the patient, taps or squeezes on departure, putting a hand on the patient's shoulder, or putting a hand on the patient's leg while asking if the patient is feeling okay.
3. Working Touch: A touch that is given for the purpose of completing procedural, maintenance, and assessment activities and assisting with ADL. Includes accidental touches associated with getting a task completed.
4. Social/Playful Touch: A touch that is a social pleasantry (i.e., expected) or associated with teasing. Examples include a nurse giving the patient a tap on the arm when patient gives the nurse a compliment that might be a little embarrassing or when the nurse playfully reprimands the patient. Includes playful or teasing taps, poking, back slapping/tapping, or hand shaking.
5. Orienting touch: Touches to direct attention or verify location. Examples include a touch on the foot as the nurse asks, "Is this the foot that hurts?" or when the nurse touches the patient's arm (as in pointing to a spot on his arm) and asks, "What happened here?"
9. Other: (*specify) If more than one type of touch occurs simultaneously, code as 9 and indicate which types are occurring as a comment. The other time this code would be used is if the intent of the touch can be determined but it does not fit into any of the above categories.

VIII. DURATION (LENGTH OF CONTACT)

This does not need to be calculated. However, a entry must be made at the beginning of a touch event and at the end of a touch event so that duration can be calculated. A touch event begins at the moment of contact and ends with a break in contact or change in form/intensity. A second will be the smallest unit used.

APPENDIX D

RESEARCH CONSENT FORM FOR NURSING STAFF

Information Sheet for Nursing Staff

Participation in research programs at the Cross Cancer Institute is entirely voluntary. Patients and Volunteers are assured that they may decline to participate or to withdraw from the study at any time without prejudice.

Title of Project: Nurse-Patient Interaction

Description of Project: The purpose of this project is to describe nurse-patient interactions. This will be done by videotaping patients and those they interact with in hospital. To record verbal and nonverbal behaviours two cameras will be used. The video recording will be taken from the camera that provides the best view of each interaction. If a patient agrees to take part in the study, the videotaping will continue for 3 days or, in other words, 72 hours. The cameras and microphone will be fixed to the wall in the patient's room so they do not interfere with nursing care activities. The videotaping will be monitored by a researcher in a near-by room. Researchers will not be in the patient's room. If necessary panning and zooming will be used to follow and make close-ups of the interactions. At any time you may request that the researcher stop videotaping if you change your mind or the situation is such that you would prefer that videotaping be discontinued. These requests may be made directly to the researcher monitoring the videotaping or indirectly through the cameras.

During this project only the researcher, her research assistants, and the researcher's supervisory committee will be viewing the videotapes. All videotapes will be stored and viewed in the researcher's office. Reports of this research may include segments of or pictures from the videotapes and may be published in professional journals. Although you may be recognized, your name will not be used with these pictures or segments. After the project is finished the videotapes may be used in teaching (for example, to teach nursing students communication skills). The videotapes may also be reanalyzed in further research. If the videotapes are used to answer research questions that are different from the ones talked about in this consent form, the researcher will obtain ethical approval according to standard procedures before beginning such research. The videotapes will be the property of Joan Bottorff, and by consenting to take part in the project any rights to these videotapes are waived.

Risks: Taking part in this project will include some loss of privacy through the use of videotaping.

Benefits: Taking part in this project will be of no direct benefit to you. The findings of this study, however, may be helpful to nurses in improving nursing care.

Any questions that you have about the project will be answered by the researchers so that you are able to fully understand the project. You may contact the following persons at any time about this project:

Investigator:
Joan L.(Lorraine) Bottorff, Doctoral Candidate
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-8233 (U of A)
438-7833 (home)

Supervisor:
Dr. Janice.M. Morse, Professor
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-6250 (U of A)
434-0105 (home)

_____
Participant's Initials

NURSE-PATIENT INTERACTION

CONSENT FOR NURSING STAFF:

I acknowledge that the research project described in the preceding information sheet bas been explained to me and that any pertinent questions I have asked have been answered to my satisfaction. I have been informed of the alternatives to participation in this study, the possible risks and discomforts. I understand that Joan Lorraine Bottorff at this phone number - 492-8233 (U of A) or 438-7833 (home) will answer any additional questions that I have about the research project.

Should I decide to withdraw from the study at any time, I may do so without prejudice to myself or the patient.

I understand that I will receive a copy of the information sheet and this consent form. I understand that information resulting from this project may be reported, but I will not be identified.

I have been assured that confidentiality will be respected.

_____	_____
(Name of Subject)	(Signature of Subject)
_____	_____
(Name of Witness)	(Signature of Witness)
_____	_____
(Name of Investigator)	(Signature of Investigator)

_____

(Date)

APPENDIX E

RESEARCH CONSENT FORM FOR INTERVIEWS WITH NURSING STAFF

Information Sheet for Nursing Staff (Interview Phase)

Participation in research programs at the Cross Cancer Institute is entirely voluntary. Patients and Volunteers are assured that they may decline to participate or to withdraw from the study at any time without prejudice.

Title of Project: Nurse-Patient Interaction

Description of Project: The purpose of this project is to describe nurse-patient interactions. This will be done by videotaping patients and those they interact with in hospital and by interviewing patients and nurses. For the interview phase of this project each patient who participates in this study will be invited to participate in an interview. In addition, one of the nurses who has cared for each patient will be interviewed. If you agree to participate in the interview phase of this project you will be interviewed once, at a time and place that is convenient for you outside of your regular hours of work. The interview, however, will not take place until all videotaping for this study has been completed. During this interview you will be asked about your participation in the study and your perceptions of the strategies used to increase patient comfort. You will also be asked to comment on short segments of the videotape of only yourself and the patient you cared for. The interview will take approximately 45 minutes and will be tape-recorded. If you do not want to answer any questions you may refuse to do so, and you can stop the interview at any time. The tapes will be transcribed and your name will not be on the transcription or associated with the study in any way.

All audiotapes will be stored and reviewed in the researcher's office. The audiotapes and transcriptions will be kept beyond the end of the study. If the audiotapes are to be used in further research, any new project will not begin until ethical approval is obtained following standard requirements.

Risks: There are no apparent risks in taking part in the interview phase of this project.

Benefits: Taking part in the interview phase of this project will be of no direct benefit to you. The findings of this study, however, may be helpful to nurses in improving nursing care.

Any questions that you have about the project will be answered by the researchers so that you are able to fully understand the project. You may contact the following persons at any time about this project:

Investigator:
Joan L.(Lorraine) Bottorff, Doctoral Candidate
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-8233 (U of A)
438-7833 (home)

Supervisor:
Dr. Janice.M. Morse, Professor
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-6250 (U of A)
434-0105 (home)

_____
Participant's Initials

NURSE-PATIENT INTERACTION

CONSENT FOR NURSING STAFF (Interview Phase):

I acknowledge that the research project described in the preceding information sheet has been explained to me and that any pertinent questions I have asked have been answered to my satisfaction. I have been informed of the alternatives to participation in this study, the possible risks and discomforts. I understand that Joan Lorraine Bottorff at this phone number - 492-8233 (U of A) or 438-7833 (home) will answer any additional questions that I have about the research project.

Should I decide to withdraw from the study at any time, I may do so without prejudice to myself or the patient.

I understand that I will receive a copy of the information sheet and this consent form. I understand that information resulting from this project may be reported, but I will not be identified.

I have been assured that confidentiality will be respected.

_____ _____

(Name of Subject) (Signature of Subject)

_____ _____

(Name of Witness) (Signature of Witness)

_____ _____

(Name of Investigator) (Signature of Investigator)

_____

(Date)

APPENDIX F

INFORMATION SHEET FOR PATIENTS AND THEIR FAMILIES

Initial Information Sheet for Patients and Their Families

Title of Project: Nurse-Patient Interaction

This information sheet has been prepared to provide you with some information about a nursing study that is taking place at this hospital. You are asked to read and consider this material over the next few days. Then if you would like to hear more about the study, simply sign the next page of the information package and return it to your primary nurse. When the investigator receives your request, she will set up an appointment with you and your immediate family member(s) to discuss the study in more detail. At this meeting the study will be explained in more detail and any questions you have about the study will be answered. Participation in research programs is entirely voluntary. You may decline to participate in the study or to withdraw from the study at any time without affecting your care. If you decide to participate you will be asked to sign a consent form.

What is the Study About?

The purpose of this project is to describe nurse-patient interactions. This will be done by continuously videotaping patients and those they interact with in hospital and by interviewing patients and nurses. The videotaping will be done using a system not unlike the surveillance cameras that are now placed in banks, stores and other public places for security purposes. To record verbal and nonverbal behaviours two cameras will be used—one focused on the upper part of the patient's body and the other on the interaction between patient and the nurse. If necessary, panning and zooming of the cameras will be used to follow and make close-ups of the interaction. When a patient agrees to take part in this study, the videotaping will continue for 3 days or, in other words, 72 hours. The cameras will be fixed to the wall in the patient's room so they do not interfere with his/her care or their ability to move about. A microphone will be attached to the head of the bed. The videotaping will be monitored by a researcher in a near-by room. The person monitoring the videotaping will be the researcher or a trained research assistant (who may possibly be a nonmedical/nonnursing person). Researchers will not be in the patient's room. At any time the patient or his or her family may request that the researcher stop videotaping if anyone changes their mind or the situation is such that they would prefer that videotaping be discontinued. These requests may be made directly to the researcher monitoring the videotaping or indirectly through the cameras.

Within the days following the completion of videotaping patients the researcher will ask patients to talk with her about their participation in the study and their perceptions of activities undertaken by nurses to comfort them. The interview may be held at a later time if this is more suitable to the patient or, if the patient wishes, he/she may decide not to participate in this interview. Patients who agree to be interviewed will also be asked to comment on short segments of the videotape of themselves and one of the nurses who cared for them. This same nurse will also be interviewed at a later date. The interview with patients will take approximately 45 minutes and will be tape-recorded. Patients may refuse to answer any questions that they do not want to answer or stop the interview at any time if they feel uncomfortable.

How will the videotapes be used?

During this project only the researcher, her research assistants, and the researcher's supervisory committee will be viewing the videotapes. All videotapes will be stored and viewed in the researcher's office. Reports of this research may include segments or pictures from the videotapes and may be published in professional journals. Although patients may be recognized, their names will not be used with these pictures or segments. After the project is finished the videotapes may be used in teaching (for example, to teach nursing students communication skills). The videotapes may also be reanalyzed in further research. If the tapes are used to answer research questions that are different from the ones

talked about in this information sheet, the researcher will obtain ethical approval according to standard procedures before beginning such research. For example, the tapes may be used to study other elements of a patient's experience in hospital. The videotapes will be the property of Joan Bottorff, and by consenting to take part in this project any rights to these videotapes are waived.

What will happen to the audio-taped recordings of the interview?
The taped interviews will be transcribed and patients' names will not be on the transcription or tape. The tapes and transcriptions will be stored in the researcher's office. The tape recordings and transcripts will be retained beyond the end of the study. If they are used for subsequent research, the researcher will obtain ethical approval according to standard procedures before beginning such research.

What are the risks in taking part in this study?
Taking part in this project will include some loss of privacy through the use of videotaping. However, it is important to remember that patients may decide to withdraw from the study at any time without altering their care.

What are the benefits to me in taking part in this study?
Taking part in this project will be of no direct benefit to you. The results of this study, however, may be helpful to nurses in improving nursing care.

Who is doing this study?
This study is being completed by Joan Bottorff, a doctoral candidate in nursing at the University of Alberta. This study is part of her program and will be supervised by Dr. Janice Morse and other professors in the Faculty of Nursing and Department of Psychology.

How do I get more information?
Any questions that you have about the project will be answered by the researcher (Joan Bottorff) so that you are able to fully understand the project. A meeting with the researcher can be arranged if you are interested in getting more information about this study. If you wish more information sign the bottom of this page and return it to your primary nurse. An appointment will be arranged by the researcher to meet with you and your immediate family member(s).

Request for More Information and a Meeting with the Investigator

I would like to hear more about the study and meet with the investigator, Joan Bottorff.

_____
Print Name

_____ _____
Signature Date

APPENDIX G

RESEARCH CONSENT FORM FOR PATIENTS

Information Sheet for Patients

Participation in research programs at the Cross Cancer Institute is entirely voluntary. Patients and Volunteers are assured that they may decline to participate or to withdraw from the study at any time without prejudice.

Title of Project: Nurse-Patient Interaction

Description of Project: The purpose of this project is to describe nurse-patient interactions. This will be done by continuously videotaping patients and those they interact with in hospital and by interviewing patients and nurses.. To record verbal and nonverbal behaviours two cameras will be used. The video recording will be taken from the camera that provides the best view of each interaction. If you agree to take part in this study, the videotaping will continue for 3 days or, in other words, 72 hours. The cameras and microphone will be fixed to the wall in your room so they do not interfere with your care or your ability to move about. The videotaping will be monitored by a researcher in a near-by room. Researchers will not be in your room. If necessary panning and zooming will be used to follow and make close-ups of the interactions. At any time you may request that the researcher stop videotaping. You many decide to take a short break for short periods by calling time out, or if you change your mind and prefer that videotaping be discontinued you may withdraw from the study at any time without altering your care. These requests may be made directly to the researcher monitoring the videotaping or indirectly through the cameras. You may withdraw from the study at any time. If you should decide to withdraw two options exist for the videotapes that have already been recorded. You may agree that the tapes be retained and used in this project or you may ask the researcher to erase the videotapes that have been recorded.

Following completion of videotaping you will be asked to participate in an interview with the researcher. The interview will be held at a time that is suitable to you. You may refuse to participate in the interview if you wish. The researcher will ask you about your participation in the study, your perceptions of activities undertaken by nurses to comfort you, and she will ask you to comment on short segments of the videotape of yourself and one of the nurses who cared for you. The interview will take approximately 45 minutes and will be tape-recorded. If you do not want to answer any questions you may refuse to do so, and you can stop the interview at any time if you feel uncomfortable. The tapes will be transcribed and your name will not be on the transcription or associated with the study in any way.

During this project only the researcher, her research assistants, and the researcher's supervisory committee will be viewing the videotapes or reviewing the audiotaped interviews. All videotapes and audiotapes will be stored and reviewed in the researcher's office. Reports of this research may include segments of or pictures from the videotapes and may be published in professional journals. Although you may be recognized your name will not be used with these pictures or segments. After the project is finished the videotapes may be used in teaching (for example, to teach nursing students communication skills). The videotapes and audiotapes may also be reanalyzed in further research. If the videotapes and audiotapes are used to answer research questions that are different from the ones talked about in this consent form, the researcher will obtain ethical approval according to standard procedures before beginning such research. The videotapes and audiotapes will be the property of Joan Bottorff, and by consenting to take part in this project any rights to these tapes are waived.

_____

Participant's Initials

Risks: Taking part in this project will include some loss of privacy through the use of videotaping. You may decide to withdraw from the study at any time without altering your care.

Benefits: Taking part in this project will be of no direct benefit to you. The results of this study, however, may be helpful to nurses in improving nursing care.

Any questions that you have about the project will be answered by the researchers so that you are able to fully understand the project. You may contact the following persons at any time about this project:

Investigator:
Joan L.(Lorraine) Bottorff, Doctoral Candidate
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-8233 (U of A)
438-7833 (Home)

Supervisor:
Dr. Janice.M. Morse, Professor
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-6250 (U of A)
434-0105 (Home)

_____
Participant's Initials

NURSE-PATIENT INTERACTION

CONSENT FOR PATIENTS:

I acknowledge that the research project described in the preceding information sheet bas been explained to me and that any pertinent questions I have asked have been answered to my satisfaction. I have been informed of the alternatives to participation in this study, the possible risks and discomforts. I understand that Joan Lorraine Bottorff at this phone number - 492-8233 (U of A) or 438-7833 (home) will answer any additional questions that I have about the research project.

Should I decide to withdraw from the study at any time, I may do so without prejudice to my overall care.

I understand that I will receive a copy of the information sheet and this consent form. I understand that information resulting from this project may be reported, but I will not be identified.

I have been assured that confidentiality will be respected.

_____ _____

(Name of Subject) (Signature of Subject)

_____ _____

(Name of Witness) (Signature of Witness)

_____ _____

(Name of Investigator) (Signature of Investigator)

_____

(Date)

APPENDIX H

RESEARCH CONSENT FORM FOR FAMILY MEMBERS, VISITORS AND NON-NURSING STAFF

Information Sheet for Family Members, Visitors, and Non-Nursing Staff

Participation in research programs at the Cross Cancer Institute is entirely voluntary. Patients and Volunteers are assured that they may decline to participate or to withdraw from the study at any time without prejudice.

Title of Project: Nurse-Patient Interaction

Description of Project: The purpose of this project is to describe nurse-patient interactions. This will be done by continuously videotaping patients and those they interact with in hospital. To record verbal and nonverbal behaviours two cameras will be used. The video recording will be taken from the camera that provides the best view of each interaction. If a patient agrees to take part in this study, videotaping will continue for 3 days or, in other words, 72 hours. The cameras and microphone will be fixed to the wall in the patient's room so they do not interfere with patient care activities. The videotaping will be monitored by a researcher in a near-by room. Researchers will not be in the patient's room. If necessary panning and zooming will be used to follow and make close-ups of the interactions. At any time you may request that the researcher stop videotaping. You may decide to take a break for short periods by calling time out, or if you change your mind and prefer that videotaping be discontinued you may withdraw from the study and the cameras will be turned off while you are in the patient's room. These requests may be made directly to the researcher monitoring the videotaping or indirectly through the cameras.

During this project only the researcher, her research assistants, and the researcher's supervisory committee will be viewing the videotapes. All videotapes will be stored and viewed in the researcher's office. Reports of this research may include segments of or pictures from the videotapes and may be published in professional journals. Although you may be recognized your name will not be used with these pictures or segments. After the project is finished the videotapes may be used in teaching (for example, to teach nursing students communication skills). The videotapes may also be reanalyzed in further research. If the tapes are to be used to answer research questions that are different from the ones talked about in this consent form, the researcher will obtain ethical approval according to standard procedures before beginning such research. The videotapes will be the property of Joan Bottorff, and by consenting to take part in the project any rights to these videotapes are waived.

Risks: Taking part in this project will include some loss of privacy through the use of videotaping.

Benefits: Taking part in this project will be of no direct benefit to you. The results of this study, however, may be helpful to nurses in improving nursing care.

Any questions that you have about the project will be answered by the researchers so that you are able to fully understand the project. You may contact the following persons at any time about this project:

Investigator:
Joan L.(Lorraine) Bottorff, Doctoral Candidate
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-8233 (U of A) 438-7833 (home)

Supervisor:
Dr. Janice.M. Morse, Professor
Faculty of Nursing, CSB, Room 5-122
University of Alberta, Edmonton
Phone: 492-6250 (U of A) 434-1050 (home)

_____
Participant's Initials

NURSE-PATIENT INTERACTION

CONSENT FOR FAMILY MEMBERS, VISITORS AND NON-NURSING STAFF:

I acknowledge that the research project described in the preceding information sheet bas been explained to me and that any pertinent questions I have asked have been answered to my satisfaction. I have been informed of the alternatives to participation in this study, the possible risks and discomforts. I understand that Joan Lorraine Bottorff at this phone number - 492-8233 (U of A) or 438-7833 (home) will answer any additional questions that I have about the research project.

Should I decide to withdraw from the study at any time, I may do so without prejudice to myself or to the patient.

I understand that I will receive a copy of the information sheet and this consent form. I understand that information resulting from this project may be reported, but I will not be identified.

I have been assured that confidentiality will be respected.

_____ _____

(Name of Subject) (Signature of Subject)

_____ _____

(Name of Witness) (Signature of Witness)

_____ _____

(Name of Investigator) (Signature of Investigator)

_____

(Date)

CURRICULUM VITAE (ABBREVIATED)

Joan L. Bottorff
Doctoral Candidate (Nursing)
Faculty of Graduate Studies and Research
University of Alberta, Edmonton, Alberta

PROFESSIONAL REGISTRATIONS:

Alberta Association of Registered Nurses- No. 27728
Victorian Nursing Council, Australia - No. G80929

PROFESSIONAL EDUCATION:

1970	Diploma in Nursing, College St. Jean-Edmonton General Hospital School of Nursing, Edmonton, Alberta
1974	Bachelor of Science in Nursing, University of Alberta, Edmonton, Alberta
1979	Bachelor of Education, University of Saskatchewan, Saskatoon, Saskatchewan
1980	Master of Education, University of Saskatchewan, Saskatoon, Saskatchewan
1988	Master of Nursing, University of Alberta, Edmonton, Alberta
currently enrolled	PhD (Nursing), Faculty of Graduate Studies and Research, University of Alberta, Edmonton, Alberta

EXPERIENCE:

Following several years of staff nursing and community health nursing, I accepted a faculty position at Phillip Institute, Melbourne, Australia in the School of Nursing. In this position I taught students in the Post-RN Bachelor's degree program and coordinated the Education stream of this program. During my six year tenure at Phillip Institute I was successful in obtaining funding to evaluate the Bachelor of Applied Science (Advanced Nursing) and completed this project. Since returning to Canada in 1986, I have been a full-time graduate student in nursing. During this time I have focused on developing a range of research skills through formal study and by being involved in a variety of research projects as a research assistant, project director, and research associate. I have continued to be involved in teaching through a part-time appointment with Athabasca University.

SERVICE CONTRIBUTIONS (during past six years):

External Reviewer (Manuscripts)
- Western Journal of Nursing Research (1988 - present)
- Qualitative Health Research (1990 - present)

Reviewer (Grant Proposals)
- National Health Research and Development Program (1991- present)

Internal Committees
- Graduate Student Representative, Graduate Education Program and Planning Committee, Faculty of Nursing, University of Alberta, 1986 to 1988
- Member, Nursing PhD Program: A Reality (NPPR) Lobby Group, Nursing Graduate Students Association, Faculty of Nursing, University of Alberta, 1989- 1991.
- Co-chair, Organizing Committee, Nursing Honour Society, Faculty of Nursing, University of Alberta, 1989 - 1990.

RESEARCH GRANTS (awarded during past six years):

Breast Milk: The Emic Perspective of Mothers, Master's Thesis, University of Alberta, 1987 - 1988 (Faculty Supervisors - Dr. J.M. Morse, Dr. V. Bergum)
$400 Faciltiation Grant, Alberta Association of Registered Nurses
$1,000 Student Research Bursary, Alberta Foundation of Nursing Research

Nurse-Patient Interaction: A Pilot Study, PhD Dissertation, University of Alberta, 1990. (Faculty Supervisor - Dr. J.M. Morse)
$1,000 Facilitation Grant, Edna Minton Endowment Fund
$5,000 Facilitation Grant, Alberta Foundation of Nursing Research
$3,180 Research Grant, Alberta Association of Registered Nurses

Nurse-Patient Interaction, PhD Dissertation, University of Alberta, 1991- present. (Faculty Supervisor - Dr. J.M. Morse)
$2,000 Student Research Bursary, Alberta Foundation of Nursing Research (declined to accept research grant award)
$20,812 Research Grant, Alberta Foundation of Nursing Research
$3,000 Research Grant, Edna Minton Endowment Fund

AWARDS (during past six years):

1987	Province of Alberta Graduate Scholarship (declined award to accept NHRDP Fellowship)
1987	National Health M.Sc. Fellowship Award, National Health Research and Development Program, Ottawa ($19,800)
1988	Libby Ritter Warick Memorial Graduate Travel Bursary, University of Alberta ($750)
1988	National Health PhD Fellowship Award, National Health Research and Development Program, Ottawa ($39,600 over two years)
1988	Graduate Faculty Fellowship, University of Alberta ($2000)
1989	McClure Award in Nursing, Faculty of Nursing, University of Alberta
1989	Graduate Faculty Fellowship, University of Alberta ($2000)
1990	Jannetta MacPhail Award, University of Alberta ($800)
1990	National Health PhD Fellowship Award, National Health Research and Development Program, Ottawa ($19,800) - extension for one year
1990	Walter H. Johns Graduate Fellowship ($2500)
1991	Andrew Stewart Memorial Graduate Prize, University of Alberta ($2500)
1991	Province of Alberta Graduate Fellowship, University of Alberta ($7000)
1992	Faculty of Nursing PhD Travel Award, University of Alberta ($1000)

PAPERS (a selection of some of the 19 papers that were presented in the last six years):

Bottorff, J.L. (May, 1987). *Perceptions of self-care agency of older adults in nursing homes. Testing of a Questionnaire.* Paper presented at the Third Biennial Research and You Conference, University of Alberta Hospitals, Edmonton, Alberta.

Morse, J.M., & Bottorff J.L. (November, 1987). *"It made me feel like a cow" The experience of managing lactation and expressing.* Paper presented at the 86th Annual Meeting of the American Anthropological Association, Chicago.

Bottorff, J.L. (June, 1988). *Breastmilk: The emic perspective of mothers.* Paper presented at the Canadian Association of University Schools of Nursing Annual Conference, Windsor, Ontario.

Morse, J.M., & Bottorff, J.L. (August, 1988). *Attitudes and ability to express: A theoretical model.* Paper presented at the International Lactation Conference, Melbourne, Australia.

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